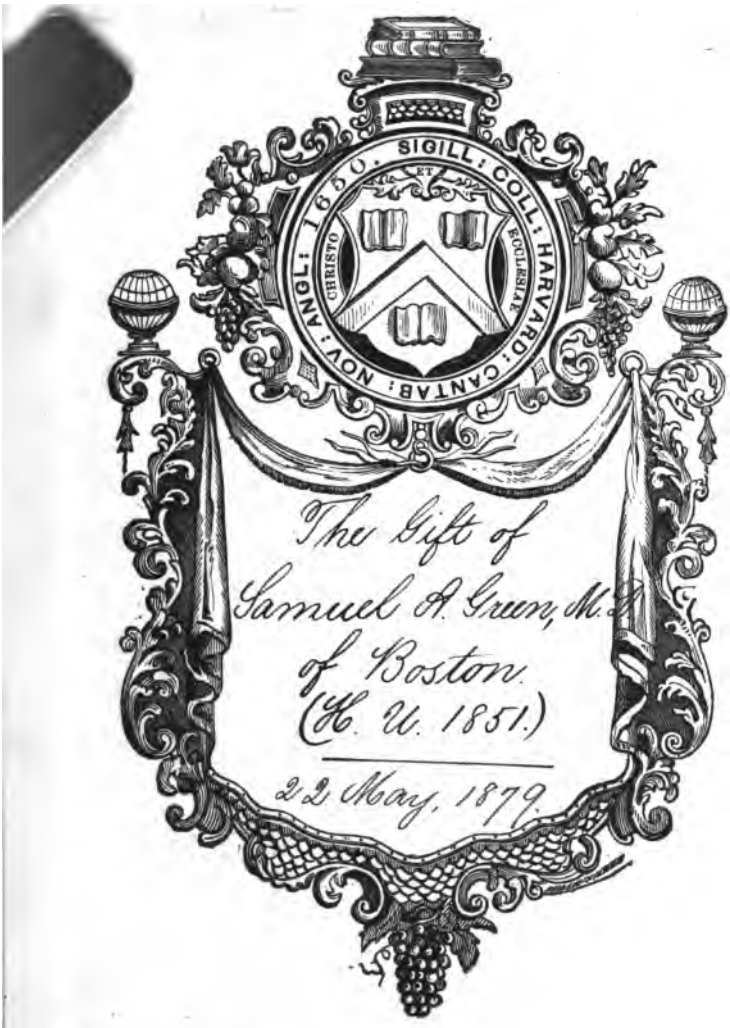
THE FRANKLIN PRIMARY ARITHMETIC.

WILLIAM WARE & Co
BOSTON.



THE

FRANKLIN

PRIMARY ARITHMETIC

BY

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PREFACE.

THE FRANKLIN PRIMARY ARITHMETIC is intended to be an aid in teaching numbers by the objective or intuitive method. As it is from objects that the child gets his first notions of numbers, so it is by the use of objects that the teacher will best succeed in imparting clear and lasting knowledge of numbers. Throughout this book, therefore, numbers are treated as numbers of things; and the things are supposed to be either actually, or in imagination, present before the pupil. To aid in this appeal to the senses a very liberal use has been made of pictures and other illustrations: these will, to some extent, take the place of tangible objects; while taken in connection with the text they serve a no less important purpose in awakening and training the imagination, or in aiding the memory to retain observed facts.

Another feature of the book is the work for the slate given in connection with all the oral exercises, by which children may early learn to express in figures their mental operations. Thus mental and written arithmetic are, as indeed they ought to be, learned at the same time. Constant use of the pencil, even in the case of very young pupils, not only greatly aids the memory in retaining results, but gives useful practice in the art of ciphering.

The method of the book turns mainly on the fact that among all the countless combinations of numbers dealt with in arithmetic there are a few elementary combinations which, when once they are thoroughly learned, give the key to all the

rest. High importance, therefore, is attached to these elementary combinations. By giving chief attention to them, not only will time be saved, but there will result a knowledge of numbers more rational and more useful than would be gained by studying a much larger number of combinations under the separate heads of Addition, Subtraction, Multiplication, and Division. To secure thorough training, then, in the elementary combinations is the prime object of this book, and the lessons have been arranged accordingly. The earlier lessons treat of all combinations that produce small numbers not exceeding ten; next come combinations that produce numbers from ten to twenty; and finally applications of these elementary combinations to numbers not exceeding one hundred. Every new number is studied with reference to the combinations that produce it. Sometimes a whole lesson or even two lessons are taken up with the combinations that produce a single number. The number is separated into parts, and the parts again united; the whole is compared with each of its parts, and each part with the whole, to find either a remainder or the excess of one number over another. Products, divisors, and quotients are found by the further study of numbers that are made up of equal parts. Thus all the language and all the operations of elementary arithmetic are brought into play while the child is dealing with small numbers, and he gets constantly renewed practice in them as he goes on with larger numbers.

The method of teaching arithmetic implied in this book is believed to be a sound and fruitful one. It is not a new method; it has stood the test of long use; but the fresh treatment and illustration it has here received may, neverthless, be of service to those who wish to see less rational methods disused.

E. P. S.
G. A. W.

Boston, May, 1879.

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PRIMARY ARITHMETIC.

Lesson I.

HOLD up your right hand.

Hold up your left hand.

One hand and one hand are two hands.

How many hands have you?

The little boy in the picture has one orange in his right hand and one orange in his left hand. How many oranges has he?

Hold up one finger. Hold up two fingers.

Point to one chair. Point to two books.

Take two steps forward. Take one step backward. Clap your hands once. Clap your hands twice.

Make one dot on your slate. Make another dot. • •

How many dots have you made?

How many ones are there in two?

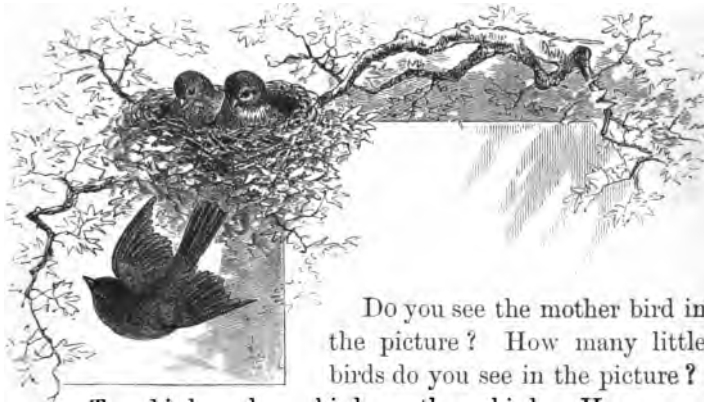
Rub out one dot; how many dots are left?

Here is the figure that stands for one.....*1*.

Here is the figure that stands for two.....*2*.

Try to make these figures on your slate.....*1, 2.*

Lesson II.



Do you see the mother bird in the picture? How many little birds do you see in the picture?

Two birds and one bird are three birds. How many birds are there in all?

If the mother bird flies away, how many birds will be left?

One bird from three birds leaves how many birds?

Put down two blocks. Now put down enough more to make three blocks. How many more did you put down? □□ □

How many ones are there in three?

You may take up two of the blocks and tell me how many are left.

Take up one more and then tell me how many are left.

Hold up two fingers on your left hand and three fingers on your right hand.

How many more do you hold up on your right hand than on your left?

How many more are three fingers than two fingers?

Make three dots on your slate. • • •

Here is the figure that stands for three.....*3*.

Make the figures *1, 2, 3* on your slate.

Lesson III.

YESTERDAY Fanny found a hen's nest and left one egg in it. To-day she found there were two more eggs in the nest. How many eggs were in the nest to-day?

One egg and two more eggs are how many?

If Fanny should take two of the eggs from the nest, how many would be left?

Two eggs from three eggs leave how many eggs?

If Fanny should take three eggs from the nest, how many would be left?

Make a straight line on your slate. ———————

Point to the ends of the line. How many ends has it?

Clap your hands twice. Now clap them once more. How many times have you clapped them?

Shut your hand. Open one finger; open another finger. How many are open? How many are shut?

I will put one pin on the table, and you may put enough more with it to make three. How many do you put with it?

Take two steps forward and one step backward. How many steps have you taken in all?

How far ahead will you be if you take three steps forward and then take two steps backward? Try and see.

Fanny's glove had three buttons, but she lost one of them off. How many were left?

Belle spent one cent for some buttons and one cent for a needle. How many cents did she spend?

After Belle had spent two cents, she had one cent left in her pocket. How many cents had she before she spent any?

Lesson VI.

REIN in your horses, little one. Don't let them go too fast.

Point to the driver of the team.

How many children is she driving?

Four and one are five.

How many children are there in all?

How many boys are there? How many girls are there?

Three and two are how many?

If one of the children goes away, how many will be left?

One from five leaves how many?

A man had two colts, and bought enough more to make five. How many colts did he buy?

Two and how many are five?

Three and how many are five?

Charley had five roses and gave four away. How many had he left? Four from five leaves how many?

Make five dots on your slate. • • • • •

Here is the figure that stands for five.....*5*.

Make the figures *1, 2, 3, 4, 5* **upon your slate.**

Lesson VII.

SUSAN and Charles are going to divide these four pears between them.

If Susan takes one and Charles takes one, and then Susan takes another and Charles another, each will have half of the pears. How many pears will each have?

What is half of four pears? What is half of four grapes?

Take four blocks in your hand. Put down half of them. Put down half of what you have left in your hand. What is half of two? What is half of four?

Put down five beans. Take two of them away; take away another two. How many twos have you taken? What is there left?

If Annie sets the table for her father and mother, her two brothers and herself, how many will she set the table for? Two and two and one are how many?

Make five marks on your slate by twos, thus: | |
How many twos are there in five, and what remains? | |
How many more are five than four? than one? |

Make five marks on your slate by threes, thus: | | |
How many threes are there in five, and what remains? | |

Make five marks on your slate by fours, thus: | | | |
How many fours are there in five, and what remains? |

Lesson VIII.

HERE is another team. This is a hard team to drive.

One of the leaders seems rather restive. All the other horses are quite steady. How many are steady?

Five horses and one horse are six horses. How many horses does Frank play he is driving? How many would be left if Frank should take off the restive leader?

One from six leaves how many?

How many would be left if Frank should take off the two leaders?

Two from six leaves how many?

Put down three blocks. Put down another three. □ □ □

How many threes have you put down? □ □ □

Three and three, or two threes, are how many?

Take four of these six blocks away and tell how many are left.

Four from six leaves how many?

Make six dots on your slate. • • • • • •

Here is the figure that stands for six.....*6*.

Make the figures *1, 2, 3, 4, 5, 6* on your slate.

Lesson IX.

How many kittens can you see on the floor in the picture?

How many other kittens can you see?

How many can you see in all?

How many more are six kittens than three kittens?

How many kittens are playing together at the chair? How many are on the table? How many others are there in the picture?

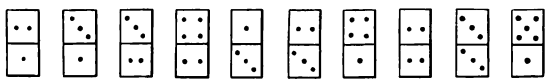
Two and two and two, or three twos, are how many?

How many kittens are there besides the one on the chair?

One and how many more make six?

If the two kittens on the table are given to Mary, and Eva takes one of those on the floor, how many will be left?

a. *b.* *c.* *d.* *e.* *f.* *g.* *h.* *i.* *j.*



$$\begin{array}{cc} 2 & 3 \\ 1 & 1 \\ \hline 3 & 4 \end{array}$$

How many dots are there in the upper part of block *a*? Make the figure that stands for two as it is made under block *a*.

How many dots are there in the lower part of block *a*? Make the figure 1 under the 2.

Now draw a line under the figures you have made. What is the whole number of dots on the block? Make the figure that stands for this number under the line.

In the same way find the number of dots in block *b*; in block *c*; and so on. We call this ***adding.***

Lesson X.

CAN you tell me, at sight, how many sticks there are on the table in the picture? If you cannot, I will tell you how to find out.

Take one stick and say "one"; take another with that one and say "two"; take another with these two and say "three"; and so on. This is counting by ones.

You can count by twos, thus: Take two sticks and say "two"; take another two with the first two and say "four"; and so on. Now count the sticks by ones; by twos.

I hope your teacher has some objects for you to count.

How many cards do you see in the picture?

The pupils in the class take the cards and tell how many letters there are in the words on the cards. Hear them.

ROBERT. Ox: two letters. IRA. Hand: four letters.

Now you may point to the words and tell how many letters each word has. Write these words and figures on your slate as George has written them on the blackboard.

Lesson XI.

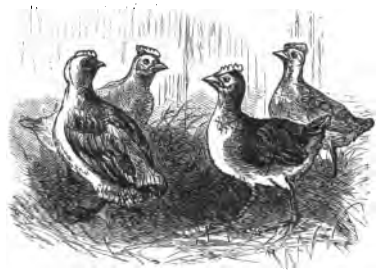
WHY need you bristle up so, you fat old hen?

"Need? Need enough. See, the cruel hawk has caught one of my dear little chickens."

How many chickens are on the ground? What has the hawk in his claws?

Six and one are seven. How many chickens do you see in the picture?

How many little chickens are running towards the hen? How many more do you see? Two and what are seven? Five and what are seven?



How many chickens do you see in this picture?

Four and what are seven? Three and four are how many?

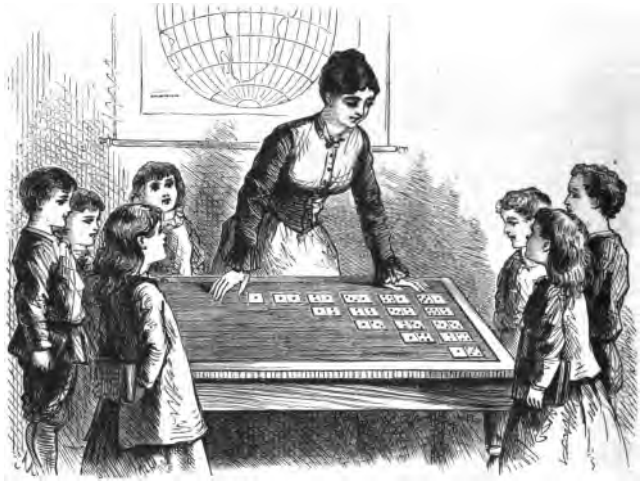
Make seven marks on your slate by twos; by threes; by fours; by fives; by sixes. How many twos are there in seven and what remains?

||	|||	||||	|||||	||||||
||	|||	|||	||	|
||	|			
|				

How many threes are there in seven and what remains? How many fours? fives? sixes?

Two and two and what are seven? Three and what are seven? Three and three and what are seven?

Lesson XII.



HERE is the teacher again teaching numbers. You may join her class and do what she asks her class to do.

TEACHER. Point to the block that has one dot. Point to the block that has two dots. What is put with one dot to make two dots?

Point to the blocks that have three dots. What is put with two dots to make three dots? What is put with one dot to make three dots?

Now hear what else the teacher says to the children.

TEACHER. You may tell each pair of numbers that make three, Mary.

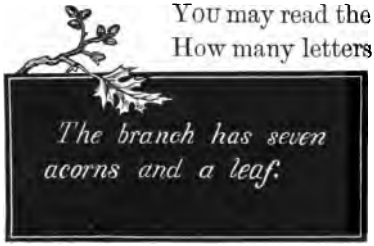
MARY. Two and one make three; one and two make three.

Now you may point to the blocks and tell each pair of numbers that make three; that make four; five; six.

Write on your slate what you have just said, thus:

2 and 1 make 3.	*3 and 1 make 4.*	*1 and 3 make 4;*
1 and 2 make 3.	*2 and 2 make 4.*	and so on.

Lesson XIII.



You may read the sentence on the blackboard. How many letters are there in the word *The? branch? has? seven? acorns? and? a? leaf?*

How many acorns are there on the branch? Three acorns and three acorns and one acorn are how many?

If one acorn should be taken from the branch, how many would be left?

One from seven will leave how many? six from seven?

Name the days of the week. How many are there?

What two equal numbers make six?

What is half of six?

I will name a number, and you may tell what number put with it will make seven: Six; five; four; three; two; one; four; two; six.

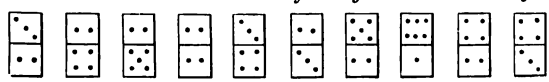
Now you may name each pair of numbers that make seven, beginning with "six and one."

Here is the figure that stands for seven.....*7*.

Make the figures *1, 2, 3, 4, 5, 6, 7* on your slate.

Slate Exercise in Adding.

a. *b.* *c.* *d.* *e.* *f.* *g.* *h.* *i.* *j.*



$\begin{array}{r} 3 \\ 2 \\ \hline 5 \end{array}$

Write on your slate the number of dots in each part of every block, and then write beneath the whole number of dots on the block, as you did on the page where the six kittens are.

Lesson XIV.

WHAT are these sleek-looking animals?

How many are without horns? How many have horns?

Seven and one are eight. How many deer are in the park?

How many are drinking? Besides these two deer, how many are there in the park?

Two and how many more are eight? How many deer are feeding? How many are not?

Three and five are how many?

How many feet has one horse? How many feet have two horses?

Four and four are how many? Two fours are how many?

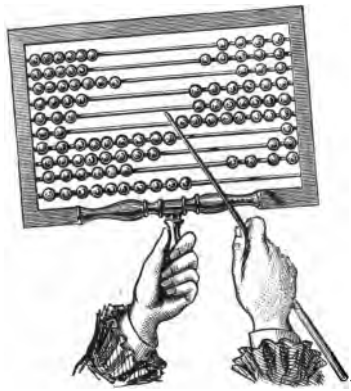
Make eight marks on your slate by twos; by threes; by fours; by fives; by sixes; by sevens.

| | | | | | | | (and so on.)

How many twos are there in eight? How many threes, and what remains? How many fours? Five and how many more are eight? Six and how many? Three and two and how many are eight?

Here is the figure that stands for eight.....8.

Make the figures *1, 2, 3, 4, 5, 6, 7, 8* on your slate.



Looking only at the right-hand part of the frame, tell me how many beads are on the upper wire.

How many more are there on the second wire than on the first? How many are there on the third wire? How many are there on both the second and third wires?

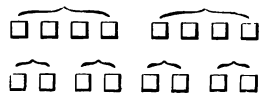
How many are there on the fourth wire?

Of what two equal numbers is six made up? • • •

Of what three equal numbers is six made up? • • •

How many threes make six? How many twos?

How many of the teacher's fingers do you see in the picture? How many fingers and thumbs? How many more fingers than thumbs?



What two equal numbers make eight? What is half of eight?

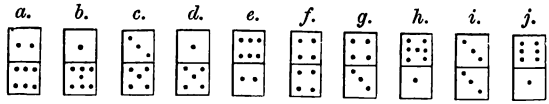
What four equal numbers make eight?

I will name one part of eight, and you may name the other: Seven; six; five; four; three; two; one; five; two; seven; three; six; four.

Now you may name each pair of numbers that make eight, beginning with "seven and one."

Slate Exercise in Adding.

a. *b.* *c.* *d.* *e.* *f.* *g.* *h.* *i.* *j.*



Write on your slate the number of dots in each part of a block, and then write the whole number beneath.

Lesson XV.

I THINK these soldiers must belong to the cold water army.

What a brave leader they have!

How many besides the leader do you see?

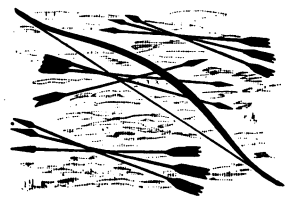
Eight and one are nine. How many are there in the whole company?

How many have flags? How many have no flags?

Two from nine leaves how many? seven from nine?

If all who have no caps should go home to get some, how many would be left? Three from nine are how many?

How many of the caps have feathers in them? How many more must there be with feathers to make nine? Four and how many more are nine?



These boys sometimes play with bows and arrows. How many arrows are there in each bunch? Three and three and three are how many? How many threes in nine?

Make nine marks on your slate by twos; by threes; by fours; fives; sixes; sevens; eights.

|| ||| |||| (and so on.)
|| ||| ||||
|| ||| |
||
|

How many twos are there in nine, and what remains? How many threes? fours? fives? Nine are how many more than six? than seven? than eight?

Here is the figure that stands for nine.....*9*.

Make the figures *1, 2, 3, 4, 5, 6, 7, 8, 9* on your slate.

Look at these figures on the blackboard.

How many 1's are there? How many 2's?

Walter made the 1's and 4's. How many figures did he make?

Harry made the 2's and Frank made the 3's. How many more figures did Frank make than Harry?

If three of the 5's should be rubbed out, how many would be left? How many 6's are there?

How many more 5's must we make to have nine 5's?

How many more 4's must we make to have nine 4's?

How many more 3's must we make to have nine 3's?

How many more 2's must we make to have nine 2's? How many more 1's to have nine 1's?

John had nine marbles, and gave three of them to Charles and three to Ralph. How many had he left?

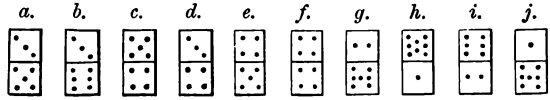
Charles has five cents. How many more must he get to have seven cents? If he has five cents, how many more must he get to have nine cents?

I will name one part of nine and you may name the other: One; five; four; six; three; seven; six; two.

Now you may name each pair of numbers that make nine, beginning with "eight and one."

Slate Exercise in Adding.

a. *b.* *c.* *d.* *e.* *f.* *g.* *h.* *i.* *j.*



Write on your slate the number of dots in each part of a block, and then write the whole number beneath.

Lesson XVI.

Ah, mother goose! you can't frighten any body by that hiss: it won't hurt. You were sly, but Charlie has found you out. See, what has he in his hand? An egg?

How many eggs are there in the nest? Nine and one are ten. How many eggs are there in all?

Don't move the eggs, Charlie! Let the goose go on them and sit.

If all but two eggs hatch, how many goslings will there be?

How many goslings are there in the water? How many on the bank? How many are there in all?

Seven and three are how many? three and seven?

If four of these goslings should be killed by a weasel, how many would be left?

How many goslings would be left if six should be killed? Four from ten leaves how many? Six from ten?

Count from one to ten. Count from ten to one.

Make ten marks on your slate by twos; by threes; by fours; fives; sixes; sevens; eights; nines.

| | | | | | | | | | (and so on.)

How many twos are there in ten? How many threes? fours? fives? How many must you take away from ten to leave six? seven? eight? nine?

Here are the figures that stand for ten.....*10*.

Make the figures *1, 2, 3, 4, 5, 6, 7, 8, 9, 10* on your slate.

How many lilies are there on the table? How many in the vase? How many in all?

How many blocks are there on the table?

There were ten blocks on the table, but the teacher has taken two blocks away, and so made the row less by two. Ten less two are how many?

If the teacher should take up two more blocks, how many blocks would she have in her hand then?

There would then be on the table ten blocks less four. Ten less four are how many? ten less five? ten less six?

Ten is made up of what two equal numbers? • • • • •

Ten is made up of what five equal numbers? • • • • •

Richard has ten lilies. If he gives half of them to Jane, how many will he have left?

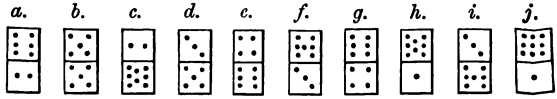
To how many children could Richard give two lilies apiece if he had ten lilies?

I will name one part of ten, and you may name the other: One; six; three; five; eight; four; seven; nine.

Now you may name each pair of numbers that make ten, beginning with "nine and one."

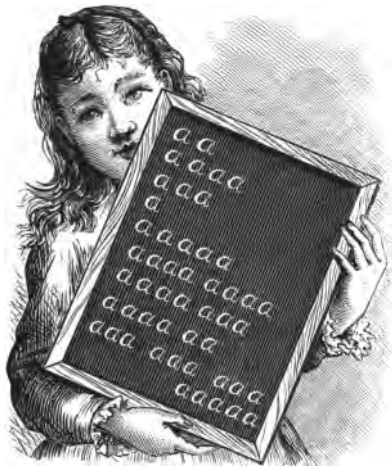
Slate Exercise in Adding.

a. *b.* *c.* *d.* *e.* *f.* *g.* *h.* *i.* *j.*



Write on your slate the number of dots in each part of a block, and then write the whole number beneath.

Lesson XVII.



You have now learned about the numbers from one to ten.

Point to each line of *a*'s on Mary's slate and tell me how many are in the line?

Now make the figures that stand for ten...*10.*

What is the name of the left-hand figure?

The right-hand figure is called ***zero.*** Point to the zero.

Name the words in the first three lines of this lesson, and tell how many letters each word has.

You learned in the last lesson that nine and one are ten.

You may write this on your slate, thus: $9 + 1 = 10$.

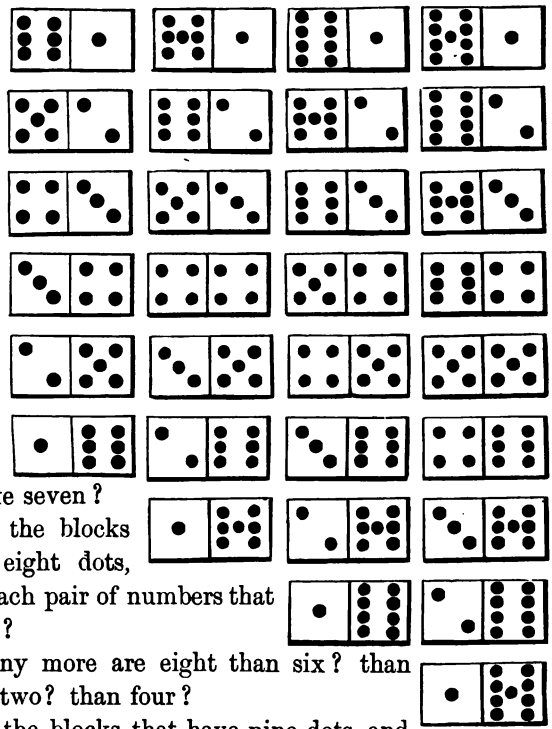
The sign + means *and* and the sign = means *equals.*

What does $8 + 2 = 10$ mean? What does $5 + 3 = 8$ mean? How many are $4 + 6$? $6 + 4$?

Copy on your slate the following tables:

$1+1=2$	$2+1=3$	$3+1=4$	$4+1=5$	$5+1=6$
	$1+2=3$	$2+2=4$	$3+2=5$	$4+2=6$
		$1+3=4$	$2+3=5$	$3+3=6$
			$1+4=5$	$2+4=6$
				$1+5=6$

Now read these tables from your slate, thus: "One and one are two"; "two and one are three"; "one and two are three"; and so on.



Point to the blocks that have seven dots, and name each pair of numbers that make seven.

How many must be put with four to make seven? with two to make seven?

Point to the blocks that have eight dots, and name each pair of numbers that make eight?

How many more are eight than six? than five? than two? than four?

Point to the blocks that have nine dots, and name each pair of numbers that make nine.

How many are nine less two? nine less three?

How many are nine less eight? less seven? less four?

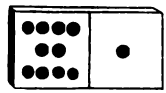
Point to the blocks that have ten dots, and name each pair of numbers that make ten.

How many fives are there in ten? how many twos?

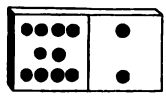
Write on your slate each pair of numbers that make seven; that make eight; nine; ten. Thus:

$6+1=7$	$7+1=8$	$8+1=9$	$9+1=10$
$5+2=7$	$6+2=8$	$7+2=9$	$8+2=10$
Etc.	Etc.	Etc.	Etc.

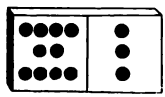
Lesson XVIII.



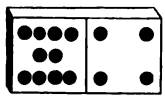
TEN and one are ***eleven,*** written .....*11.*
Make eleven dots on your slate.
Make the figures that stand for eleven.



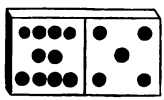
Ten and two are ***twelve,*** written .....*12.*
Make twelve dots on your slate.
Make the figures that stand for twelve.



Ten and three are ***thirteen,*** written ....*13.*
Make thirteen dots on your slate.
Make the figures that stand for thirteen.



Ten and four are ***fourteen,*** written.....*14.*
Make fourteen dots on your slate.
Make the figures that stand for fourteen.



Ten and five are ***fifteen,*** written.....*15.*
Make fifteen dots on your slate.
Make the figures that stand for fifteen.

How many must be put with ten to make eleven? twelve? thirteen? fourteen? fifteen?

Robbie has ten marbles and Oscar has two. How many have both?

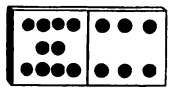
There were thirteen eggs in the nest, but three have rolled out. How many are left?

Kate has ten currants on one stem and four on another. How many has she in all?

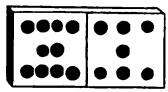
How many plums are ten plums and five plums?

Read the following table, and write it on your slate:

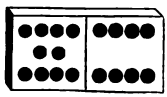
$10+1=11$	$10+3=13$	$10+5=15$
$10+2=12$	$10+4=14$	



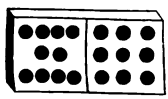
Ten and six are ***sixteen,*** written.....*16.*
Make sixteen dots on your slate.
Make the figures that stand for sixteen.



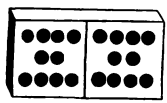
Ten and seven are ***seventeen,*** written...*17.*
Make seventeen dots on your slate.
Make the figures that stand for seventeen.



Ten and eight are ***eighteen,*** written ....*18.*
Make eighteen dots on your slate.
Make the figures that stand for eighteen.



Ten and nine are ***nineteen,*** written.....*19.*
Make nineteen dots on your slate.
Make the figures that stand for nineteen.



Two tens are ***twenty,*** written ..... *20.*
Make twenty dots on your slate.
Make the figures that stand for twenty.

Ten and how many more make sixteen? seventeen? eighteen? nineteen? How many tens make twenty?

These are Nellie's little rabbits. How many are there? Kate has enough more to make sixteen in all. How many rabbits has Kate?

How many boys are ten boys and seven boys?
How many hats are ten hats and eight hats?
How many balls are ten balls and nine balls?
What numbers do these figures stand for?

12, 15, 11, 16, 17, 19, 20, 18, 14, 13.

Read the following table, and write it on your slate:

10 + 6 = 16	10 + 8 = 18	10 + 10 = 20
10 + 7 = 17	10 + 9 = 19	

Lesson XIX.

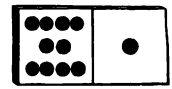
SEE how tame these doves are! One is feeding from Frank's hand.

How many others are there? How many in all?

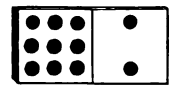
There is another dove by the side of Frank. How many besides these two are there in the picture? What do nine and two make?

If three doves should fly away, how many would be left? 3 from 11 leaves how many?

How many doves are on the ground? Seven and how many are 11?

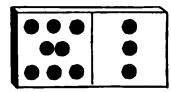


How many dots are in the upper block? How many are 11 less 1? 11 less 10?



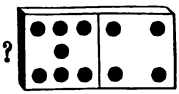
Three 3's are how many? 9 and 2?

Three and 2 and 3 are how many? Eight and how many are 11?



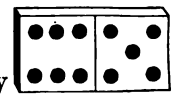
How many are $3+1+3$? $7+4$?

How many more are 11 than 7? than 4?



Six and what are 11? 5 and what?

Five and 2 and 2 and what are 11?



I will name one part of 11 and you may name the other: 10; 1; 9; 2; 8; 3; 7; 4; 6; 5.

Make 11 marks on your slate by 2's; 3's; 4's; 5's.

How many 2's are there in 11? How many 3's? 4's? 5's?

Slate Exercise in Adding.

Copy on your slate the following, and add the numbers that the figures stand for, as you added the dots on page 15:

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
1	2	1	2	4	1	3	1	5	2
1	1	3	2	1	3	2	4	1	4
2	3								

Charles has 11 apples and Ralph has 7. How many more apples has Charles than Ralph?

How many of my fingers must be put with your 8 fingers to make 11?

There were 6 sheep in a pen and the owner bought enough more to make 11. How many did he buy?

A bureau has 6 drawers; 5 of them have 2 handles apiece and the other has 1 handle. How many handles have all?

Annie had 11 plums and has eaten 1 of them. How many has she left?

Annie will give what she has left to her two little brothers. How many can she give to each?

What is half of ten plums? of ten grapes?

You learned in the last page that 11 less 1 are 10; this is the way you may write it: $11-1=10$.

The sign $-$ means *less*. What does the sign $=$ mean?

Taking part of a number away is ***subtracting***.

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
$2-1=$	$4-3=$	$5-2=$	$4-3=$
$3-1=$	$4-2=$	$5-4=$	$3-2=$
$3-2=$	$5-1=$	$6-1=$	$6-3=$
$4-1=$	$5-3=$	$6-4=$	$5-3=$

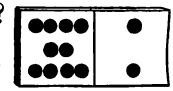
Lesson XX.

CLARA is going to pick some grapes for her father. How many bunches do you see below her arm? How many more bunches do you see in the picture? How many in all?

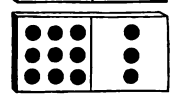
Ten and two are how many? two and ten?

If Clara should pick the bunch she has hold of, how many bunches would be left? 1 from 12 leaves how many?

If Clara should pick the bunch she has taken hold of, and the bunch above it, and one bunch more, how many bunches would she pick? How many would be left?

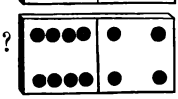


Four and 2 and 4 are how many? 10 and what number are 12? 2 and what are 12?



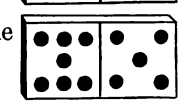
How many are 10 less 1? 9 + 3?

How many 3's in 9? in 12? 12 − 9?



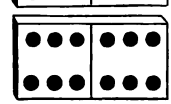
How many more are there in 12 than in 8?

Three 4's are how many?



Two and 3 and 2 are how many? One part of 12 is 7; name the other part.

How many 6's in 12?



There are 3 winter months, 3 spring months, 3 summer months, and 3 autumn months. How many months are there in the year?

Make 12 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's.

How many 2's in 12? How many 3's? 4's? 5's? 6's?

Slate Exercise in Adding.

Copy the following, and add the numbers that the figures stand for:

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
3	6	2	3	5	7	1	3	2	4
3	1	4	5	2	1	5	4	6	4

No one lives in this house. Here are 8 windows, and the glass is out of half of them. How many windows have no glass?

One window has 12 panes of glass in it. Half the panes are in the upper sash and half in the lower. How many panes are in each sash?

What is one half of 12? of 6? of 10? of 8?

If you have 2 apples and eat 1, how many will be left? If you have 12 apples and eat 1, how many will be left?

How many are 2 less 1? 12 less 1? 12 less 11?

Willie had 12 cents and spent 5 cents for a top. How many cents had he left?

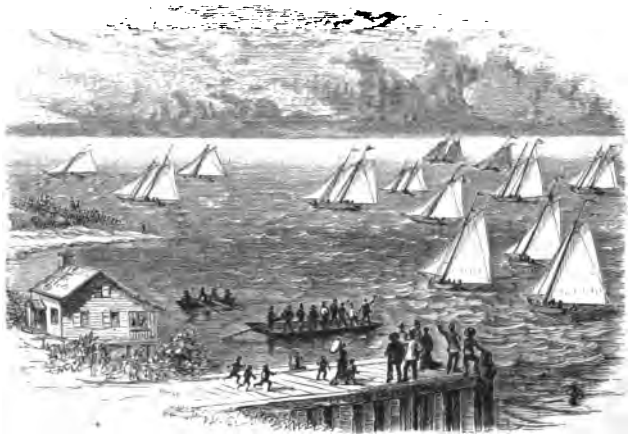
If you have 8 cents, how many cents must your father give you to make enough to buy a top worth 12 cents?

I will name one part of 12 and you may name the other: 10; 2; 8; 4; 9; 5; 7; 3; 6; 11; 1.

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
6 − 3 =	7 − 3 =	7 − 1 =	6 − 2 =
6 − 2 =	7 − 2 =	8 − 2 =	7 − 1 =
6 − 5 =	7 − 5 =	8 − 3 =	6 − 4 =
7 − 6 =	7 − 4 =	8 − 1 =	8 − 3 =

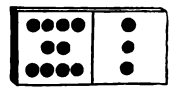
Lesson XXI.



How many yachts are there in that part of the fleet at the right of the picture? How many in the part at the left? How many are there in all?

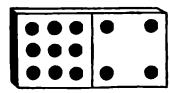
There are 9 persons in the scow and 4 in the boat. How many are there in both?

How many more are there in the scow than in the boat?

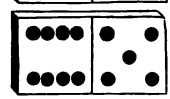


What number taken from 13 leaves 10?

4 and 2 and how many are 13?

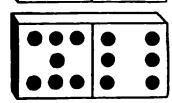


If you have 9 dots on your slate, how many more must you make to have 13?



If you have 5 dots on your slate, how many more must you make to have 13?

If you have 13 dots on your slate, how many must you rub out to leave 6?



Make 13 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's.

How many 2's in 13? how many 3's? 4's? 5's? 6's?

Slate Exercise in Adding.

In Example *a*, begin at the bottom of the column, and *think* "one, two, four"; then write 4 under the line. In doing Example *b*, *think* "two, six, seven"; then write 7 under the line. In the same way do the other examples.

	a.		*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
⚄	2	⚀	1	3	2	3	4	5	2	2
⚀	1	⚃	4	2	3	2	1	1	2	3
⚀	1	⚁	2	1	2	3	2	3	4	4

The AMERICAN FLAG has 13 stripes. 7 are red and the rest are white. How many are white? If 3 red stripes and 2 white stripes are torn off, how many stripes will remain?

Mary found 12 nuts under a tree. She ate 3, gave away 3, and then divided the rest equally between her two brothers. How many did she give to each of her brothers?

Dora had 13 buttons on her sack and lost 2 of them. How many were left?

How many flowers are 4 buttercups and 9 daisies?

John has 2 cents and Amy has 12. If you should give each of them another cent, how many would John then have? How many would Amy have?

How many are $2+1$? $12+1$? $1+2$? $11+2$?

I will name one part of 13 and you may name the other: 10; 3; 9; 4; 8; 5; 6; 7; 12; 2; 11; 1.

Copy and fill out the following:

j.	*k.*	*l.*	*m.*
$8-4=$	$9-1=$	$9-6=$	$8-5=$
$8-6=$	$9-2=$	$9-8=$	$9-7=$
$8-5=$	$9-5=$	$9-3=$	$8-6=$
$8-7=$	$9-4=$	$9-7=$	$9-3=$

Lesson XXII.

CHARLES is making a house for his little brother Freddie. How many blocks has he put in it?

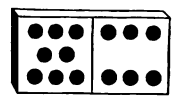
How many blocks has Freddie?

How many blocks are there in all?

If Freddie should put one of his blocks in the house, how many would there be in the house? How many blocks would Freddie have left?

There were 14 yards of yarn on the ball, but the cat has unwound 4 yards. How many yards are left on the ball?

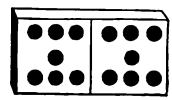
Tell me, at sight, how many dots there are in the first right-hand square; in the fourth; in the third.



How many added to ten make 14?

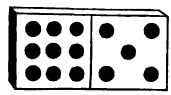
How many are 14 — 5? 14 — 9?

Nine and 2 and how many are 14?

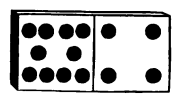


Eight and 3 and how many are 14?

How many are 14 — 6? 14 — 8?



What is one half of 14?



Make 14 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's.

How many 2's are there in 14? How many 3's; 4's; 5's; 6's; 7's?

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
2	4	2	3	1	2	2	1	2	3
1	1	2	1	1	2	1	2	2	5
2	2	1	2	4	4	6	3	5	3
3	2	4	4	6	4	2	4	3	2

Mr. Treat caught 14 fishes, and sold all but 2 of them. How many did he sell?

If he sells one of these fishes for 14 cents and the other for 5 cents less, how much does he get for the other?

If 6 of the fishes that he caught weighed a pound apiece, and the rest together weighed 7 pounds, how much did all weigh?

There are 12 quarts of water in Prudy's fish-pond. How many more quarts must be put in to make 14 quarts?

A woman has agreed to knit 7 pairs of socks. When she has knit 11 socks, how many more socks has she to knit?

How many are $1+3$? $11+3$? $4-3$? $14-3$?

Twelve single things make a dozen. How much will a dozen and 2 eggs cost at a cent apiece?

How many are $2+2$? $12+2$? $2+12$?

I will name one part of 14 and you may name the other: 10; 4; 7; 8; 6; 9; 5; 13; 12; 3; 11; 1; 2.

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
$11-4=$	$11-5=$	$12-3=$	$9-\ \ =4$
$11-2=$	$11-7=$	$12-6=$	$11-\ \ =7$
$11-1=$	$11-8=$	$12-4=$	$12-\ \ =9$
$11-3=$	$12-6=$	$12-5=$	$11-\ \ =5$

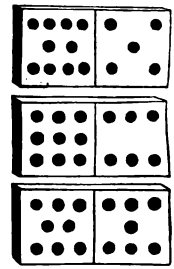
Lesson XXIII.

HERE is a picture of a gold eagle and a half-eagle. The eagle is worth 10 dollars, and the half-eagle is worth one half of 10 dollars. How many dollars is the half-eagle worth?

How many dollars are the eagle and half-eagle together worth? 10 and 5 are how many?

Those are half-eagles in the pile. How many half-eagles are there in the pile? in the picture?

14 and 1 are how many? $1 + 14 = ?$



How many dots are there in the first right-hand square? in the third? in the second?

Point to the square that has 9 dots; 10 dots; 8 dots; 6 dots; 5 dots; 7 dots.

10 and how many are 15? 9 and how many? 8 and how many?

I will name one part of 15 and you may name the other: 10; 5; 7; 8; 9; 11; 6; 12; 4; 13.

Make 15 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's.

How many 2's are there in 15? how many 3's? 4's? 5's? 6's? 7's?

Copy and fill out the following:

a.	*b.*	*c.*	*d.*
$4 + 7 =$	$8 + 4 =$	$3 + 9 =$	$4 + \quad = 11$
$3 + 5 =$	$4 + 5 =$	$10 + 3 =$	$7 + \quad = 13$
$2 + 9 =$	$6 + 6 =$	$9 + 4 =$	$9 + \quad = 12$
$10 + 2 =$	$5 + 7 =$	$8 + 6 =$	$3 + \quad = 11$
$7 + 3 =$	$3 + 8 =$	$7 + 6 =$	$5 + \quad = 13$

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
1	1	1	1	3	4	1	3	4	1
3	1	0	5	2	2	4	6	1	5
1	4	2	0	4	5	4	3	0	0
5	3	6	5	2	1	2	0	6	7
2	2	1	2	1	2	2	1	3	1

Grace is fourteen years old, and she is cutting and making herself a dress. If she works 5 hours a day on it, how many hours will she work in 2 days? in 3 days?

If it takes her 15 hours to make the skirt, and she has worked 8 hours on it, how many more hours must she work before it is done?

If some ribbon costs 6 cents a yard, what must you pay for 2 yards? for half a yard? for 2 yards and a half?

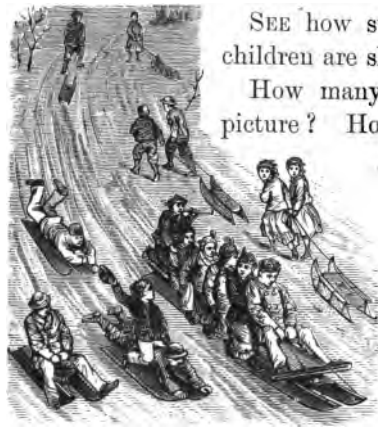
Charles bought a pen-holder for 8 cents and some pens for 4 cents, and gave the store-keeper a 10-cent piece and a 5-cent piece. How many cents should the store-keeper give him back?

Two men started from the same place; one went north 7 miles, and the other went south 6 miles. How far apart were they then?

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
$12-3=$	$12-8=$	$13-4=$	$7-2=$
$12-6=$	$12-9=$	$13-9=$	$9-6=$
$12-5=$	$13-3=$	$13-7=$	$10-4=$
$12-7=$	$13-6=$	$13-8=$	$12-7=$
$12-4=$	$13-5=$	$14-4=$	$13-6=$

Lesson XXIV.



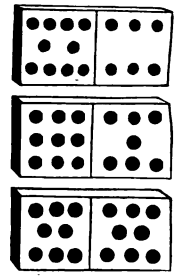
See how swift they go! How many children are sliding down hill?

How many more do you see in the picture? How many in all?

How many of the coasters are girls? How many are boys?

16 less 7 are how many?

Tell me at sight how many dots there are in the first right-hand square below; in the third; in the second.



How many are in the first left-hand square? in the third? in the second?

Three and 3 and 3 and how many more are 16? What is half of 16?

I will name one part of 16 and you may name the other: 10; 6; 8; 9; 7; 15; 13; 11; 12; 2; 5; 14; 3; 1.

Make 16 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's; by 8's.

How many 2's are there in 16? How many 3's? 4's? 5's? 6's? 7's? 8's?

Copy and fill out the following:

a.	*b.*	*c.*	*d.*
$6+7=$	$8+6=$	$9+6=$	$9+\ =16$
$14-7=$	$15-8=$	$16-9=$	$8+\ =14$
$4+9=$	$6+8=$	$7+8=$	$6+\ =11$
$14-8=$	$15-9=$	$16-6=$	$4+\ =13$
$9+5=$	$10+5=$	$10+6=$	$6+\ =15$

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
2	1	2	1	1	5	1	6	4	3
4	4	0	2	1	0	1	0	0	2
3	1	2	3	4	3	8	0	1	4
1	6	7	6	8	4	1	5	7	4
2	2	2	3	1	2	2	4	3	1

It snowed very fast all last night, and now the snow is 16 inches deep. Yesterday it was 4 inches deep. How many inches of snow fell last night?

How many are 6 less 4? 16 − 4?

Thomas, the larger boy, was 16 years old last August. Harry was 8 last August. How many years younger is Harry than Thomas?

The boys' caps cost a dollar apiece, and their coats cost 5 dollars apiece. How much did the coats and hats together cost?

There were 16 snow-birds in the path, but the dog frightened all but 5 away. How many did he frighten away?

How many are 16 − 5? 16 − 15? 16 − 2? 16 − 12?

Harry has 3 brothers, 4 sisters, and 7 cousins. When he is with them all, how many are together?

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
14 − 5 =	15 − 5 =	16 − 7 =	11 − 5 =
5 + 8 =	7 + 7 =	8 + 7 =	15 − 6 =
14 − 9 =	15 − 6 =	16 − 8 =	12 − 5 =
10 + 4 =	5 + 9 =	6 + 9 =	16 − 9 =
14 − 6 =	15 − 7 =	13 − 5 =	14 − 6 =
8 + 1 =	9 + 2 =	6 + 4 =	10 + 2 =

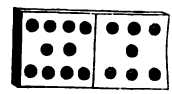
Lesson XXV.

No, no, Annie! the sheep won't hurt you. They think you have something for them. See, Daisy is putting her nose into the basket! How many sheep are around little Annie?

The other sheep that you see belong to the same flock. How many sheep are there in all?

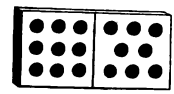
Five of the sheep are feeding. How many are not?

17 less 5 are how many?



Point to the square that has 10 dots; 7 dots; 9 dots; 8 dots.

Ten and what number make 17? 7 and what? 8 and what? 9 and what?



Annie has 8 turnips. How many more should she have to make one apiece for the sheep?

I will name one part of 17 and you may name the other: 7; 6; 11; 5; 12; 9; 13; 3; 14; 2; 15; 1; 16; 8.

Make 17 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's; by 8's.

How many 2's are there in 17? How many 3's? 4's? 5's? 6's? 7's? 8's?

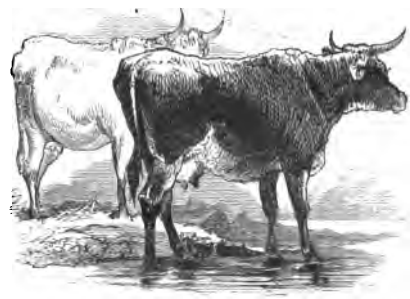
Copy and fill out the following:

a.	*b.*	*c.*	*d.*
$1+4=$	$4+4=$	$6+8=$	$5+7=$
$9-2=$	$11-3=$	$11-7=$	$8+7=$
$7+3=$	$3+7=$	$2+6=$	$3+9=$
$6-3=$	$16-7=$	$14-5=$	$9+6=$

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
2	3	1	1	3	1	5	4	3	4
3	2	4	5	6	0	0	5	3	2
4	2	5	1	0	6	1	0	2	4
3	7	2	4	5	6	8	2	1	2
3	2	4	3	1	1	2	5	5	6

A farmer owned 17 cows, but has sold all but 2. How many cows has he sold?



If the farmer's red cow gives 17 quarts of milk in a day, and his white cow gives 3 quarts less, how many quarts does his white cow give?

Two pints make a quart. If you drink a pint of milk a day, in how many days will you drink a quart?

How many pints will you drink in 6 days? how many quarts? How many quarts will you drink in a week?

If milk costs 5 cents a quart, and you have 7 cents, how many more cents must you have to buy 3 quarts?

How many are $4 + 4 + 5 - 2 - 7$?

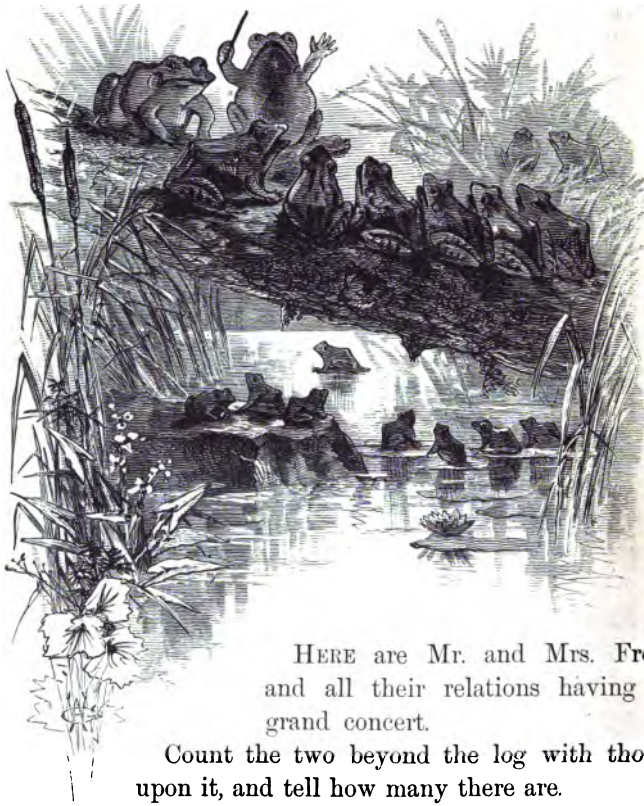
Emma is 5 years old and Alfred is 15. How old will Emma be in 2 years? How old will Alfred be?

How many are $5 + 2$? $15 + 2$? $7 - 5$? $17 - 5$?

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
$7 - 4 =$	$14 - 8 =$	$16 - 8 =$	$13 - \quad = 10$
$5 + 4 =$	$5 + 2 =$	$8 + 4 =$	$14 - \quad = 7$
$8 - 1 =$	$15 - 9 =$	$12 - 4 =$	$15 - \quad = 8$
$9 + 5 =$	$6 + 6 =$	$1 + 3 =$	$11 - \quad = 3$
$4 - 2 =$	$13 - 8 =$	$12 - 9 =$	$12 - \quad = 6$

Lesson XXVI.



HERE are Mr. and Mrs. Frog and all their relations having a grand concert.

Count the two beyond the log with those upon it, and tell how many there are.

How many are under the log? How many in all?

If that old Mr. Frog should jump into the water, how many frogs would be left on the log?

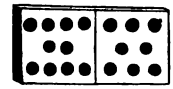
One from 8 leaves how many? 1 from 18?

If 2 of the 8 frogs on the log should dive under water and swim away, how many would be left on the log? How many would be left in all?

2 from 8 leaves how many? 2 from 18?

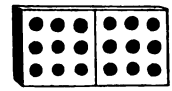
Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
7	3	5	9	5	3	7	8	3	9
3	7	6	5	0	4	3	4	7	2
2	4	2	1	9	9	2	1	3	0
2	2	3	2	3	1	4	5	2	6



How many put with 5 make 8? How many put with 15 make 18?

Charlotte has 18 pins; Mary has 13. How many more has Charlotte than Mary?



How many are 9 and 9? 18 less 9?

What is half of 18?

There were 8 trees on each side of a walk and 2 more trees in the yard. How many trees were there in all?

If a dog runs 18 miles in an hour and a deer runs 15 miles in the same time, how many more miles in one hour does the dog run than the deer?

I will name one part of 18 and you may name the other: 10; 9; 12; 6; 8; 14; 4; 13; 3; 16; 6; 5; 7; 11; 2; 15; 17.

If you have 14 cents, how many more must you get to have 18 in all?

4 and what make 8? 14 and what make 18?

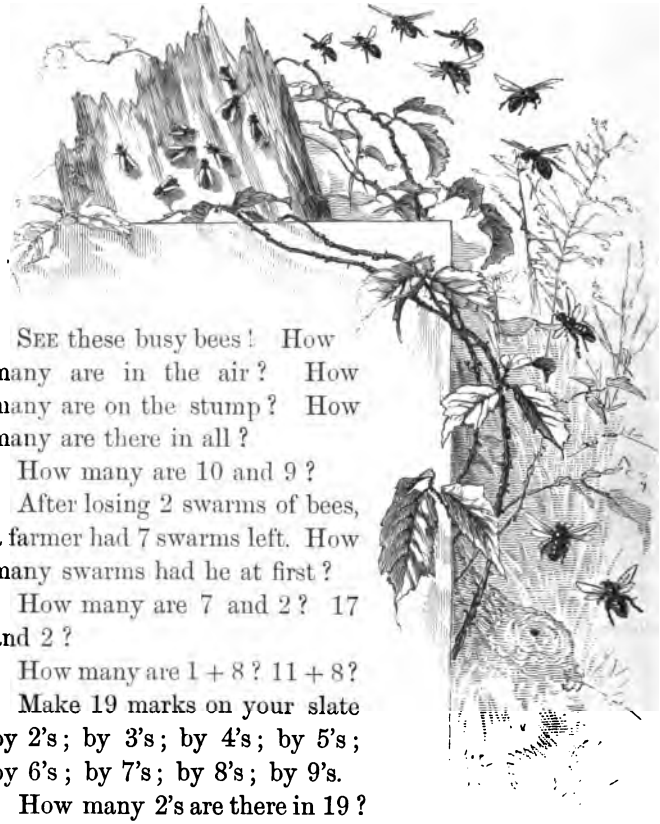
Make 18 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's; by 8's; by 9's.

How many 2's are there in 18? how many 3's? 4's? 5's? 6's? 7's? 8's? 9's?

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
7 + 4 =	8 + 3 =	8 + 7 =	9 + 4 =
12 − 6 =	13 − 6 =	14 − 6 =	13 − 5 =
10 + 3 =	10 + 4 =	10 + 6 =	10 + 7 =
11 − 3 =	14 − 7 =	12 − 5 =	16 − 8 =
9 + 8 =	9 + 5 =	8 + 6 =	9 + 6 =

Lesson XXVII.



SEE these busy bees! How many are in the air? How many are on the stump? How many are there in all?

How many are 10 and 9?

After losing 2 swarms of bees, a farmer had 7 swarms left. How many swarms had he at first?

How many are 7 and 2? 17 and 2?

How many are 1 + 8? 11 + 8?

Make 19 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's; by 8's; by 9's.

How many 2's are there in 19? How many 3's? 4's? 5's? 6's? 7's? 8's? 9's?

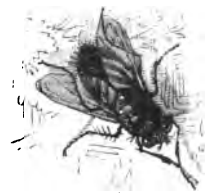
Copy and fill out the following:

a.	*b.*	*c.*	*d.*
17 + 1 =	15 + 3 =	17 − 5 =	14 + 4 =
18 − 4 =	13 + 6 =	14 + 2 =	18 + 1 =
14 + 5 =	17 − 3 =	12 + 3 =	18 − 3 =
19 − 8 =	19 − 5 =	19 − 6 =	16 + 2 =
13 − 2 =	15 + 2 =	14 + 3 =	16 − 4 =

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
2	3	2	1	1	5	1	4	1	3
3	0	1	6	0	3	9	1	3	2
1	8	9	8	6	4	0	8	6	7
7	4	5	1	9	4	4	4	2	4
4	3	0	1	2	1	4	1	5	2

A spider caught 7 flies on Monday, 8 on Tuesday, and 4 on Wednesday. How many did he catch on Monday and Tuesday? How many on Tuesday and Wednesday? How many in all?



One cold day 3 flies lighted on the window-pane. Emma counted their wings and their eyes and their feet. How many wings did she count? How many eyes? How many feet?

If 19 flies were in the kitchen this morning and 12 of them were driven out, how many were left?

There are 18 windows in a house, and only 11 of them have screens. How many have no screens?

One day John picked 12 purple violets and 5 white ones. Ida picked 11 purple violets and 8 white ones. How many violets did John pick? How many did Ida pick? How many more did Ida pick than John?

I will name one part of 19 and you may name the other: 9; 10; 14; 12; 8; 6.

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
15 + 1 =	17 − 2 =	19 − 4 =	13 + 2 =
17 − 4 =	14 − 1 =	18 − 5 =	11 + 6 =
16 + 3 =	15 − 2 =	14 − 2 =	12 + 4 =
16 − 2 =	19 − 3 =	15 + 4 =	18 − 6 =
12 + 2 =	13 + 4 =	17 + 2 =	17 + 1 =

Lesson XXVIII.

How many swallows are over the barn and on the roof at the right of the picture? How many are on the chimney and roof of the house at the left? How many in all? Two 10's are how many?

If that large swallow on the house should fly to the barn, how many would be on and near the barn then? How many would be left at the house?

One morning Henry fed 9 sparrows, 3 robins, and 8 doves. How many birds did he feed in all?

Ralph has 13 doves, and Ethel has 7 more than he has. How many doves has Ethel? If 2 of Ethel's doves should fly away, how many would she have left?

Make 20 marks on your slate by 2's; by 3's; by 4's; by 5's; by 6's; by 7's; by 8's; by 9's; by 10's.

In 20 how many 4's? 6's? 8's? 5's? 7's? 9's? 3's?

Copy and fill out the following:

a.	*b.*	*c.*	*d.*
9 + 7 =	8 + 9 =	10 + 9 =	17 − 8 =
7 + 9 =	9 + 8 =	9 + 10 =	17 − 10 =
8 + 8 =	7 + 10 =	10 + 10 =	18 − 8 =
10 + 6 =	10 + 8 =	17 − 7 =	18 − 9 =
10 + 7 =	9 + 9 =	17 − 9 =	19 − 9 =

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
3	1	6	3	2	5	1	2	6	4
5	7	0	2	9	0	2	8	4	5
6	7	9	7	4	6	7	0	1	2
2	2	3	4	1	5	7	8	4	5
2	1	1	3	1	3	1	1	2	3

Can you tell the name of this animal? What a wise look he has! How many fingers and thumbs has a monkey on one fore paw? How many on both?

He has the same number of fingers and thumbs on his hind paws, too. How many fingers and thumbs has he in all?

How many are 5 and 5 and 5 and 5? Four 5's are how many?

Frank set his white hen on 17 eggs. All but 2 hatched; but 4 of the chickens were carried off by a hawk. How many chickens did the white hen have left?

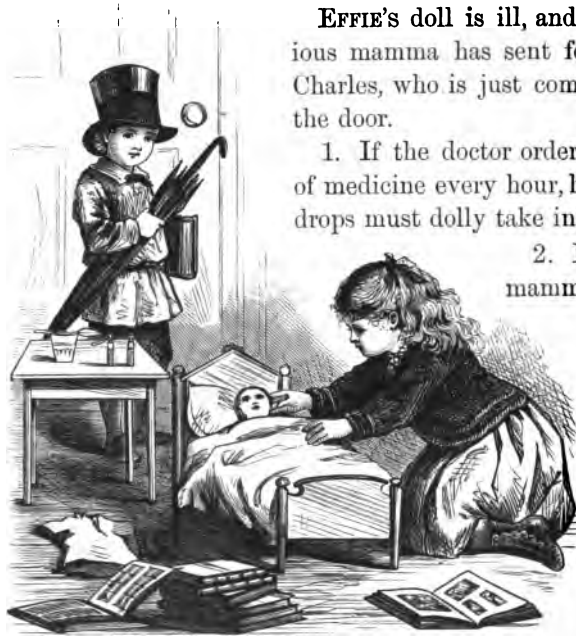
The black hen has 11 chickens of her own, 5 of Redtop's, and 3 of the old speckled hen's. How many chickens has she in all?

How many cents are two 10-cent pieces worth?

Copy and fill out the following:

k.	*l.*	*m.*	*n.*
7 + = 16	8 + = 17	10 + = 20	17 − = 9
10 + = 16	7 + = 17	17 − = 10	18 − = 10
9 + = 17	9 + = 17	17 − = 8	19 − = 10
8 + = 16	6 + = 17	10 + = 19	17 − = 7
10 + = 17	10 + = 17	9 + = 19	18 − = 8

Lesson XXIX.



EFFIE'S doll is ill, and her anxious mamma has sent for Doctor Charles, who is just coming in at the door.

1. If the doctor orders 5 drops of medicine every hour, how many drops must dolly take in 2 hours?

2. Dolly's mamma has put a plaster on her chest that she bought for 7 pins, and she paid 9 pins for her cough-drops. How many pins did both cost?

3. Effie had a present of dolly's bedstead, because when her father gave her 17 hard words to spell, she spelt all right but 2. How many words did she spell right?

4. If dolly's hat cost 9 cents and her boots cost 11 cents more than her hat, how many cents did her boots cost?

5. Effie has 7 picture-books and a song-book. Charles has 5 story-books, and each has a scrap-book. How many books has Effie? How many has Charles? How many books have both together?

6. Charles had 12 books, and he has only 6 books now. If he gave 1 away and lost all the rest, how many did he lose?

7. Charles is trying now to take care of his books. How many more must he get to have as many as Effie has now?

8. On the first page of Effie's scrap-book is a picture of 5 large seals and 9 small ones. How many seals are in the picture?

9. Effie's mother spent an hour every day for 6 days, and 4 hours besides, in making her scrap-book. How many hours did she spend in all?

10. Charles made his own scrap-book, and put in it 2 stories about dogs, 3 about birds, 1 about a walrus, 1 about flying kites, and 9 other stories. How many stories did he put in the book?

11. These stories filled 17 pages, and he has 3 pages more to fill. How many pages are there in his book?

12. By and by the children's mother is coming to take them to ride to their grandfather's, who lives 4 miles away. How far must they ride in going and coming back?

13. Their grandfather has 2 oxen, 7 cows, 4 calves, 1 horse, 2 pigs, and 4 sheep. How many animals have I told you he has?

14. Besides these, he has 6 doves, 8 hens, and 17 little chickens. How many more hens than doves has he?

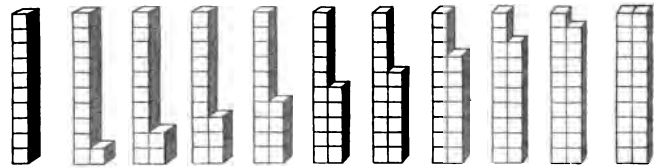
15. If a weasel should steal 4 of the little chickens, how many would be left?

16. Effie and Charles love to play in their grandfather's barn. Charles takes 14 steps in going across the barn floor, and Effie takes 19. How many more steps does Effie take than Charles?

17. Effie and Charles are planning a tea-party for to-morrow if the doll is well enough. They will ask Kate and her two sisters, and Emma and Johnny, and Johnny's little brother. If all come, how many children will there be at the party, counting Effie and Charles?

Lesson XXX.

Numbers from Ten to Twenty.



How many ones are there in the number 10?

How many tens are there in the number 10?

How many tens and how many ones are there in the number 11?

How many tens and how many ones are there in 12? in 13? in 15? in 18? in 14? in 19? in 16? in 17?

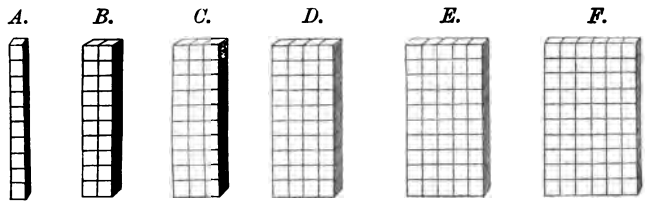
How many tens are there in 20?

Numbers from Twenty to Thirty.

Twenty and one are ***twenty-one,*** written *21*
Twenty and two are ***twenty-two,*** written *22*
Twenty and three are ***twenty-three,*** written..... *23*
Twenty and four are ***twenty-four,*** written..... *24*
Twenty and five are ***twenty-five,*** written *25*
Twenty and six are ***twenty-six,*** written..... *26*
Twenty and seven are ***twenty-seven,*** written *27*
Twenty and eight are ***twenty-eight,*** written..... *28*
Twenty and nine are ***twenty-nine,*** written..... *29*
Twenty and ten, or three tens, are ***thirty,*** written..... *30*

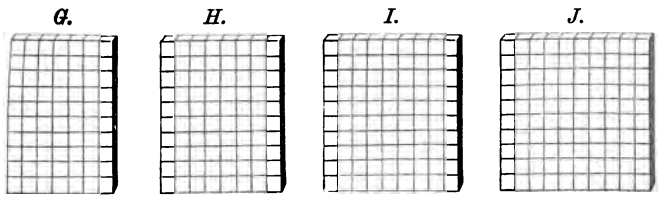
Count by ones from twenty to thirty; from thirty to twenty. Write these numbers in figures on your slate.

Numbers made up of Tens.



How many tens are there in the collection of blocks marked *A?* in *B?* in *C?* in *D?* in *E?* in *F?*

Four tens are ***forty,*** written..... *40*
Five tens are ***fifty,*** written *50*
Six tens are ***sixty,*** written *60*



How many tens are there in *G?* in *H?* in *I?* in *J?*

Seven tens are ***seventy,*** written *70*
Eight tens are ***eighty,*** written *80*
Nine tens are ***ninety,*** written *90*
Ten tens are a ***hundred,*** written *100*

Read the following:

a. 20.	***c.*** 30.	***e.*** 80.	***g.*** 10.	***i.*** 90.
b. 40.	***d.*** 60.	***f.*** 50.	***h.*** 70.	***j.*** 100.

Write in figures: sixty; eighty; thirty; fifty; twenty; ninety; forty; seventy; a hundred.

Count by tens to a hundred, thus: "Ten; twenty; thirty"; and so on.

Numbers to a Hundred.

Thirty and one are ***thirty-one,*** written *31*
Thirty and two are ***thirty-two,*** written *32*
Thirty and five are ***thirty-five,*** written *35*

Count by ones from thirty to forty. Write these numbers.

Forty and one are ***forty-one,*** written *41*
Forty and three are ***forty-three,*** written *43*
Forty and six are ***forty-six,*** written *46*

Count by ones from forty to fifty. Write these numbers.

Fifty and one are ***fifty-one,*** written *51*
Fifty and five are ***fifty-five,*** written *55*
Sixty and one are ***sixty-one,*** written *61*
Sixty and eight are ***sixty-eight,*** written *68*
Seventy and one are ***seventy-one,*** written..... *71*
Seventy and nine are ***seventy-nine,*** written *79*
Eighty and one are ***eighty-one,*** written..... *81*
Eighty and six are ***eighty-six,*** written *86*
Ninety and one are ***ninety-one,*** written..... *91*
Ninety and nine are ***ninety-nine,*** written *99*

Now see if you can count by ones from one to a hundred.

Read the following, and tell how many tens and ones there are in each number:

k. 21.	*m.* 32.	*o.* 58.	*q.* 75.	*s.* 94.
l. 26.	*n.* 43.	*p.* 69.	*r.* 87.	*t.* 100.

Write in figures on your slate:

Twenty-two.	Thirty-three.	Eighty-one.
Sixty-two.	Forty-five.	Eighty-nine.
Seventy-three.	Sixty-seven.	Ninety-six.
Eighty-four.	Fifty-eight.	One hundred.

Lesson XXXI.

HERE is Mary reading to her brother. She has been telling him about numbers, and here are some blocks like those she arranged for him to count. You may answer the questions she asked him, and you may do what she told him to do.

MARY. Freddie, as I name the rows you may point to the blocks and tell me how many there are in each row. Ready:

Upper row; next row; next; next; next; next; next; next; next; last.

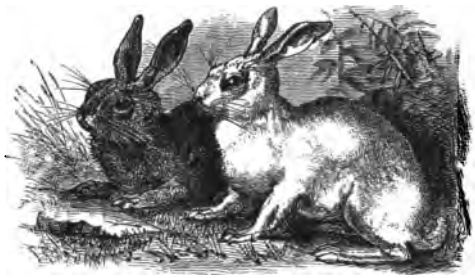
Now begin with the last row you pointed at, and, going backward, tell me again how many there are in each row.

How many ones are there in 2? in 4? in 7? in 5? in 8? in 10?

Exercise in Adding at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
(1.) Add	1	1	1	1	1	1	2	2	2
to	1	21	31	2	22	32	1	21	31
(2.) Add	2	2	2	2	2	2	3	3	3
to	3	23	43	6	26	46	4	24	34
(3.) Add	3	3	3	3	3	3	3	3	3
to	7	27	47	8	28	38	9	29	59

Lesson XXXII.



1. How many ears has one rabbit?

2. How many ears have two rabbits?

3. Two 2's are how many?

4. How many 2's are there in 4?

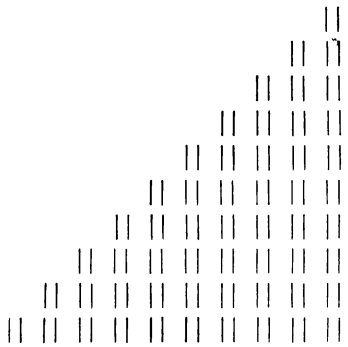
5. How many wings has 1 bird? How many have 3 birds?

6. How many are three 2's?

7. How many 2's are there in 6?

Mary made some marks on the blackboard by twos, and when she stopped at the end of a row Freddie told her how many twos there were and how many marks she had made.

What Mary made.



What Freddie said.

"1 two, 2."
"2 twos, 4."
"3 twos, 6."
"4 twos, 8," and so on.

You may tell the rest that Freddie said.

8. How many ears has each of these puppies? How many have all?

Slate Exercise.

Write these figures on your slate and add the numbers they stand for. As you add them, copy and fill out the table at the right.

$2 = 2.$
$2 + 2 = 4.$
$2 + 2 + 2 =$
$2 + 2 + 2 + 2 =$
$2 + 2 + 2 + 2 + 2 =$
$2 + 2 + 2 + 2 + 2 + 2 =$
$2 + 2 + 2 + 2 + 2 + 2 + 2 =$
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =$
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =$
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 =$

TABLE.

1 two is 2.
2 twos are 4.
3 twos are
4 twos are
5 twos are
6 twos are
7 twos are
8 twos are
9 twos are
10 twos are

Repeat the table forward and back.

Uniting equal numbers is called ***multiplying.***

Thus, uniting 3 twos is called *multiplying* two by 3.

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
Multiply	2	2	2	2	2	2	2	2	2
by	3	4	6	2	5	8	7	9	10

9. How many 2's are there in 4? in 8? in 6? in 2? in 10? in 12? in 18? in 14? in 20? in 16?

10. Helen had 2 pears each day for 2 days. How many pears did she have in all?

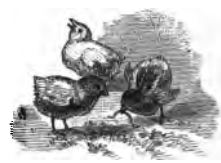
11. Dora missed 2 words of her spelling-lesson on Monday, 2 words on Tuesday, and 2 words on Wednesday. How many words did she miss in the 3 days?

12. If Dora should keep on missing 2 words every day, how many words would she miss in 5 days? in 7 days?

13. How many plums will it take to give Frank and 5 other children 2 plums apiece?

14. If it takes 2 yards of cloth to make an apron, how many yards will it take to make 9 aprons? to make 10 aprons?

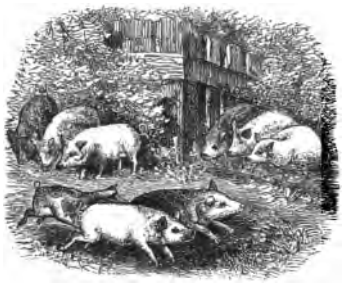
Lesson XXXIII.



1. HERE are three chickens for you and three for Etta. How many chickens for both? Two 3's are how many?

2. How many feet have three chickens? Three 2's are how many?

3. How many 3's are there in 6? How many 2's?



4. Three pigs running, three pigs resting, and three pigs rooting in the ground. How many pigs are there in all?

5. Three 3's are how many?

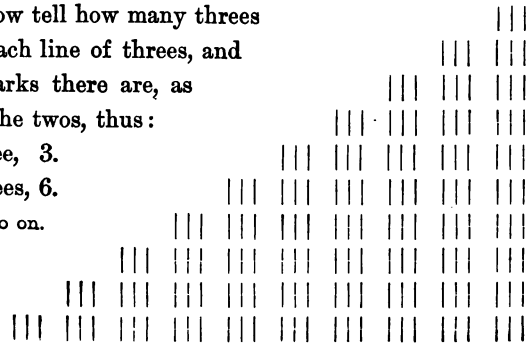
6. Three more pigs belonged to the same litter, but they have been sold. How many were in the litter at first?

7. Four 3's are how many?

8. How many 3's are there in 9? in 12?

You may now tell how many threes there are in each line of threes, and how many marks there are, as Freddie told the twos, thus:

1 three, 3.
2 threes, 6.
And so on.



Slate Exercises.

Write these figures and add the numbers they stand for. As you add the numbers, copy and fill out the table at the right.

$3 = 3.$
$3 + 3 = 6.$
$3 + 3 + 3 =$
$3 + 3 + 3 + 3 =$
$3 + 3 + 3 + 3 + 3 =$
$3 + 3 + 3 + 3 + 3 + 3 =$
$3 + 3 + 3 + 3 + 3 + 3 + 3 =$
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 =$
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 =$
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 =$

TABLE.

1 three is 3.
2 threes are 6.
3 threes are
4 threes are
5 threes are
6 threes are
7 threes are
8 threes are
9 threes are
10 threes are

Repeat the table forward and back.

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
Multiply	3	3	3	3	3	3	3	3	3
by	2	4	7	6	3	9	8	5	10

9. Count these acorns by 2's. How many 2's are there?

10. Count them by 3's. How many 3's are there?

Is there any difference between two 3's and three 2's?

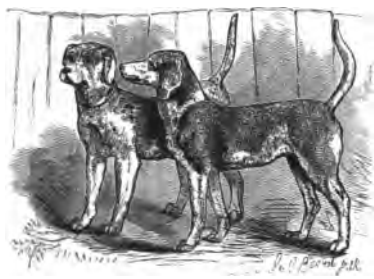
11. Which would you rather have: 3 paper bags with 2 oranges in each, or 2 paper bags with 3 oranges in each? Why?

12. If one cent will buy 3 apples, how many apples will 5 cents buy?

13. A class of little folks formed a procession and marched in 6 rows, 3 in a row. How many were in the class?

14. If there are 8 rows of children, 3 in a row, how many children are there in all?

Lesson XXXIV.



1. How many feet has one dog? How many feet have two dogs? Two 4's are how many?

2. How many ears have four dogs? Four 2's are how many?

3. How many 4's are there in 8? How many 2's?

4. How many feet have three dogs? How many have three kittens? Three 4's are how many?

5. Make 4 marks on your slate; make 4 more marks; make 4 more. How many times have you made 4 marks? How many marks have you made?

6. How many marks are 3 times 4 marks?

7. How many wheels are there on a wagon? How many wheels must a person have to make 4 wagons? Four 4's are how many?

8. Make 4 marks 5 times. 5 times 4, or five 4's, are how many?

Exercise in Adding at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
(9). Add	4	4	4	4	4	4	4	4	4
to	2	22	32	4	24	34	6	16	36
(10.) Add	4	4	4	4	4	4	4	4	4
to	8	18	28	10	20	40	9	19	29

Exercise in Subtracting at sight.

(11.) From	6	16	36	11	21	41	12	22	32
take	4	4	4	4	4	4	4	4	4

Slate Exercise.

Write these figures and add the numbers they stand for. As you add the numbers, copy and fill out the table at the right.

$4 = 4.$
$4 + 4 = 8.$
$4 + 4 + 4 =$
$4 + 4 + 4 + 4 =$
$4 + 4 + 4 + 4 + 4 =$
$4 + 4 + 4 + 4 + 4 + 4 =$
$4 + 4 + 4 + 4 + 4 + 4 + 4 =$
$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 =$
$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 =$
$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 =$

TABLE.

1 four is 4.
2 fours are 8.
3 fours are
4 fours are
5 fours are
6 fours are
7 fours are
8 fours are
9 fours are
10 fours are

Repeat the table forward and back.

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
Multiply	4	4	4	4	4	4	4	4	4
by	2	7	3	8	6	10	4	9	5

4 multiplied by 2 can be written thus: 4×2.

4×2 may be read "four multiplied by two," or "two times four."

12. How many are two 4's, or 4×2? six 4's, or 4×6?

13. How many 4's are there in 4? in 8? in 16? in 24? in 12? in 20? in 36? in 32? in 40?

14. If you should buy 4 oranges at 4 cents apiece, how many cents would you pay for them?

15. If you carry 4 sticks of wood into the house, and then 4 more, and then 4 more, and so on 7 times, how many sticks will you carry in? 7 times 4 are how many?

16. I know a boy who carried in 8 armfuls of wood for his grandmother. If there were 4 sticks in each armful, how many sticks did he carry?

17. If he had gone once more and carried 4 sticks, how many sticks would he have carried her in all?

Lesson XXXV.

About measuring Distances.

HERE is a line an *inch* long: ⊢——————⊣

Get a strip of paper and mark off 12 inches upon it. Now you have something to measure with.

How many inches long is your pencil? your slate?

How many inches is it around your wrist? your neck?

Twelve inches make a *foot*. Place your hands a foot apart. Hold your hand a foot from the floor.

Mark off 3 feet on the floor. Three feet make a *yard*.

This boy is measuring the room with a yardstick. Can you hold your hands a yard apart?

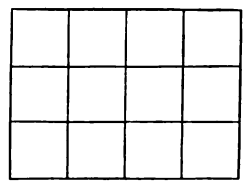
Find how long the schoolroom is.

1. How many feet are there in 2 yards? in 3 yards? in 5 yards?

Now repeat the table:

12 inches make a foot.
3 feet make a yard.

2. Count these squares by 3's. How many 3's are there? How many squares?



3. Count them by 4's. How many 4's are there?

4. Is there any difference between four 3's and three 4's?

5. Edith had 4 rows of patchwork, 3 squares in a row, and Grace had 3 rows, 4 squares in a row. How many squares did each girl have?

Lesson XXXVI.

About measuring Liquids, as Milk, Oil, etc.

In the picture is a gill-cup, a pint-measure, a quart-measure, and a milk-can that holds a gallon.

If your teacher has these measures for you to use, try and find how many times you must fill a gill-cup and pour it into the pint-measure to fill it. You will in this way learn how many gills make a pint. Then you may try to find how many pints make a quart and how many quarts make a gallon.

Now repeat the table:

4 gills make a pint.
2 pints make a quart.
4 quarts make a gallon.

1. How many gills are there in 1 pint? in 2 pints?

2. How many times must you fill a gill-cup to measure out a pint of milk? How many times must you fill it to measure out a quart?

3. How many pints are there in 1 quart? in 4 quarts or a gallon? in 2 gallons?

4. How many times must you fill a pint-cup to measure a gallon of oysters?

5. If there are 8 gills in a quart, how many gills are there in a gallon?

6. How many pint-bottles will it take to hold 2 quarts of catsup?

7. A man has a can which contains 2 gallons of milk. How many quarts does it contain? If the man sells 1 quart to one person, 2 quarts to another, and 2 quarts to another, how many quarts will be left in the can?

Lesson XXXVII.

CAN you tell the names of the parts of a flower? Point to the petals of one of the flowers.

1. If each flower has 5 petals, how many petals have 2 flowers?

2. How many petals have 3 flowers? 4 flowers?

3. How many are three 5's? four 5's?

4. How many 5's in 20?

Adding at sight.

		a.	*b.*	*c.*	*d.*
(5.)	Add	5	5	5	5
	to	5	15	35	45

Subtracting at sight.

(6.)	From	10	20	30	40
	take	5	5	5	5

Slate Exercise.

Write these figures and add the numbers they stand for. As you add the numbers, copy and fill out the table at the right.

$5 = 5.$
$5 + 5 = 10.$
$5 + 5 + 5 =$
$5 + 5 + 5 + 5 =$
$5 + 5 + 5 + 5 + 5 =$
$5 + 5 + 5 + 5 + 5 + 5 =$
$5 + 5 + 5 + 5 + 5 + 5 + 5 =$
$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =$
$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =$
$5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 =$

TABLE.

1 five is 5.
2 fives are 10.
3 fives are
4 fives are
5 fives are
6 fives are
7 fives are
8 fives are
9 fives are
10 fives are

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
(7.) Multiply	5	5	5	5	5	5	5	4	3
by	6	5	8	10	7	9	4	5	8

8. How many 5's are there in 25? in 10? in 35? in 20? in 40? in 45? in 15? in 30? in 50?

9. Emma has 5 books, and Charles has 3 times as many and 1 book more. How many books has Charles?

10. How many books have Charles and Emma together?

11. Mrs. Jay sent May with 25 cents to buy 4 spools of cotton at 5 cents a spool. How much did they cost? How many cents should May take back with the cotton?

12. If your brother is 5 years old, and your mother is 7 times as old as your brother, how old is your mother?

13. If your father is 8 times as old as your brother, how old is your father?

14. What must be paid for 7 pounds of sweet potatoes at 5 cents a pound and a bunch of beets worth 4 cents?

15. I saw a man with a basketful of bottles of mucilage which he was selling at 5 cents a bottle. I bought 6 bottles. How much did they come to?

16. Johnny's coat cost 5 dollars, and the man who sold it has 10 more just like it. If he gets 5 dollars for each coat, how much will he get for the 10?

17. In the picture on the opposite page each of the leaves has 5 leaflets; point to one of the leaflets. How many leaflets are there in 5 of the leaves? in 6?

18. What will 9 plates cost at 5 cents apiece?

19. How many are 5×9? $19 + 5$? $19 - 5$?

20. How many are 5×7? $17 + 5$? $17 - 5$?

21. How many are 8×3? $18 + 3$? $18 - 3$?

Lesson XXXVIII.

How many legs does this beetle have?

1. If each beetle has 6 legs, how many legs do 2 beetles have?

2. Two 6's are how many?

3. How many 6's are there in 12? how many 3's? how many 2's? how many 1's? how many 4's?

4. Make 6 marks on your slate 3 times. How many are 3 times 6 marks? How many 6's are there in 18?

Exercise in Adding and Subtracting at sight.

		a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
(5.)	Add	6	6	6	6	6	6	6	6	6
	to	2	22	42	4	24	54	6	26	36

(6.) $8+6=?$ $18+6?$ $48+6?$ $10+6?$ $20+6?$ $30+6?$
(7.) $8-6=?$ $18-6?$ $48-6?$ $10-6?$ $30-6?$ $60-6?$
(8.) $12-6=?$ $22-6?$ $42-6?$ $14-6?$ $24-6?$ $54-6?$

Slate Exercise.

Copy and fill out on your slate the exercise and the table. As you copy each line of the exercise, count by 6's forward and back, thus: 6, 12, 12, 6; 6, 12, 18, 18, 12, 6; and so on.

$6=6$. *1 six is 6.*
$6+6=$ *2 sixes are*
$6+6+6=$ *3 sixes are*
$6+6+6+6=$ *4 sixes are*
$6+6+6+6+6=$ *5 sixes are*
$6+6+6+6+6+6=$ *6 sixes are*
$6+6+6+6+6+6+6=$ *7 sixes are*
$6+6+6+6+6+6+6+6=$ *8 sixes are*
$6+6+6+6+6+6+6+6+6=$ *9 sixes are*
$6+6+6+6+6+6+6+6+6+6=$ *10 sixes are*

TABLE.

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
(9.) Multiply	6	6	6	6	6	6	6	5	4
by	4	9	10	7	8	6	5	6	6

10. How many 6's are there in 12? in 24? in 18? in 36? in 30? in 48? in 42? in 60? in 54?

11. Helen knits 6 times around a stocking every day. How many times does she knit around in 3 days? in 4 days?

12. Belle sews 6 stitches in a minute. How many stitches will she sew in 5 minutes? in 10 minutes?

13. Clara has 6 knots of ribbon on her dress and 6 loops in every knot. How many loops of ribbon has she on her dress?

14. Seven girls have each 6 yards of ribbon. How many yards do all the girls have?

15. Nine boys have each 6 yards of kite-line. How long a line would it make if it was all in one piece?

16. Eight men have oysters served on the half-shell. If they eat 6 oysters apiece, how many do all eat?

17. Walter picked up 2 burrs and found 3 chestnuts in each burr. How many chestnuts did he find in both burrs?

18. Eva's class read twice every day. How many times do they read in 4 days?

19. Edgar plays 3 games of ball every day of his vacation. How many games does he play in 5 days?

20. If 3 hodfuls of coal are used for a fire in 1 day, how many hodfuls are used in 8 days? in 10 days?

21. James asked Etta to tell him how many 7 times 3 were. What ought she to have said?

22. How many cents have 6 boys, if each boy has 4 cents?

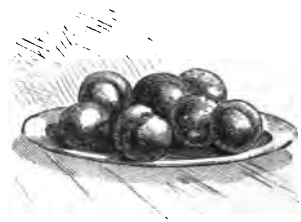
23. You may tell what 3×9 equals; 6×9; 6×8.

Lesson XXXIX.

1. CHERRIES! cherries! Seven cherries for you. If Alice also has seven, how many cherries have you both?

2. Two 7's are how many? How many 7's in 14? ||||||| |||||||

3. Seven peaches were put on the dinner-table Monday, seven more were put there on Tuesday, and seven more on Wednesday. How many were there in all?



||||||| ||||||| |||||||

4. Three 7's are how many?

Exercise in Adding and Subtracting at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
(5.) Add	7	7	7	7	7	7	7	7	7	7
to	1	21	2	42	3	63	5	35	6	56

(6.) $8+7=?$ $18+7?$ $28+7?$ $9+7?$ $29+7?$ $49+7?$

(7.) $12-7=?$ $42-7?$ $13-7?$ $63-7?$ $15-7?$ $35-7?$

Slate Exercise.

Copy and fill out on your slate the exercise and the table. As you copy each line of the exercise, count by 7's, forward and back, thus: 7, 14, 14, 7; 7, 14, 21, 21, 14, 7; and so on.

$7=7.$
$7+7=$
$7+7+7=$
$7+7+7+7=$
$7+7+7+7+7=$
$7+7+7+7+7+7=$
$7+7+7+7+7+7+7=$
$7+7+7+7+7+7+7+7=$
$7+7+7+7+7+7+7+7+7=$
$7+7+7+7+7+7+7+7+7+7=$

TABLE.

1 seven is 7.
2 sevens are
3 sevens are
4 sevens are
5 sevens are
6 sevens are
7 sevens are
8 sevens are
9 sevens are
10 sevens are

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
(8.) Multiply	7	7	7	7	7	7	7	6	7	5
by	3	8	7	4	9	10	5	7	6	7

9. How many 7's are there in 14? in 28? in 42? in 35? in 49? in 63? in 56? in 70?

10. How many days are there in 2 weeks? in 4 weeks?

11. Clara bought 3 oranges at 7 cents apiece. How much did they cost?

12. Sarah filled 6 pages of her scrap-book, and put 7 pictures on each page. How many pictures did she put in her book?

13. If you have 5 strings and put 7 horse-chestnuts on each string, how many chestnuts do you string?

14. John earns 7 dollars a week. How many dollars does he earn in 8 weeks? in 10 weeks?

15. Eva made 7 letters on the cushion, putting 7 pins in a letter. How many pins did she use?

16. If one settee will seat 7 persons, how many will 9 settees seat?

17. Richard was in school 4 hours a day. How many hours was he there in 5 days? in 6 days?

18. Mark was at school 2 hours a day in study and 3 in recitation. How many hours was he at school in 1 day? in 4 days? in 5 days? in 6 days?

19. How many are 7 times 5? $7 + 5$? $7 - 5$?

20. How many are six 5's $+ 1$? six 4's $+ 3$?

21. How many are eight 3's $+ 1$? eight 7's $+ 2$?

22. How many are nine 4's? nine 5's? $9 + 5$?

23. How many more in 6×3 than in 4×4?

Lesson XL.

Do you know of what color a lobster is when he is boiled? He is red; but when alive he is dark green.

1. How many little side-claws has a lobster? How many little side-claws have 2 lobsters?

|||| |||| |||| ||||

2. Two 8's are how many? How many 8's in 16?

Make 8 rings; make 8 more; 8 more.

o o o o o o o o o o o o
o o o o o o o o o o o o

3. How many times have you made 8 rings? $8 \times 3 = ?$

Exercise in Adding and Subtracting at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*
(4.) Add	8	8	8	8	8	8	8	8	8
to	2	32	72	4	24	64	6	16	56
(5.) From	10	40	80	12	32	72	14	24	64
take	8	8	8	8	8	8	8	8	8

Slate Exercise.

Copy and fill out on your slate the exercise and the table. As you copy each line of the exercise, count by 8's forward and back.

$8 = 8.$
$8 + 8 =$
$8 + 8 + 8 =$
$8 + 8 + 8 + 8 =$
$8 + 8 + 8 + 8 + 8 =$
$8 + 8 + 8 + 8 + 8 + 8 =$
$8 + 8 + 8 + 8 + 8 + 8 + 8 =$
$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 =$
$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 =$
$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 =$

TABLE.

1 eight is 8.
2 eights are
3 eights are
4 eights are
5 eights are
6 eights are
7 eights are
8 eights are
9 eights are
10 eights are

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
(6.) Multiply	8	8	8	8	8	8	8	8	7	5
by	5	2	3	4	10	9	6	7	8	9

7. How many 8's are there in 24? in 16? in 32? in 56? in 40? in 48? in 72? in 80?

8. If it takes 8 yards of cloth for your mother's wrapper, how many yards will it take to make 2 such wrappers?

9. Mr. Ray's horse travelled 8 miles an hour for 4 hours. How far did he go in 4 hours? in 3 hours?

10. Six men paid 8 dollars apiece for a boat. How much did all pay?

11. How many pears will it take to give 8 pears apiece to 5 girls? to 8 girls?

12. Mary thinks 7 times 8 are 56. Is she right?

13. Mary does not know what 9 times 8 equals. Can you tell her?

14. What will 10 yards of cotton cost at 8 cents a yard?

15. Effie is 2 years old, and her sister is 5 times as old. How old is her sister?

16. Effie's brother is 9 times as old as she is. How old is her brother?

17. How many years younger is Effie than her brother?

18. How many times does the sun rise in 1 week? in 4 weeks? How many times will it set in 5 weeks and 2 days?

19. When Benny was sick he played with his Noah's ark, and put all the animals in rows of 4 each. After he had put them all up he had 8 rows and one animal left over. How many animals belonged to the ark?

20. How many are 4 times 8 and 1 more? $8 \times 5 + 4 = ?$

21. John's mother gave him a paint-box with 2 rows of paints in it, 8 in a row. How many paints did he have?

Lesson XLI.

About measuring Dry Things, as Berries and Grain.

HERE is a picture of a pint-measure, a quart-measure, a peck-measure, and a bushel-basket.

How many pints of milk make a quart? Just the same number of pints of dry things make a quart, but these pints and quarts are a little larger than pints and quarts of milk.

Try to find how many quarts make a peck and how many pecks make a bushel. I hope you will find these measures at home if you do not have them at school.

Repeat the table:

2 pints make a quart.
8 quarts make a peck.
4 pecks make a bushel.

1. A man had a peck of peanuts; how many quarts had he? He sold the peanuts by the pint; how many pints did he sell? If the peanuts were 4 cents a pint, how much did the man get for a quart? How much for the whole peck?

2. How many times must you fill a peck-measure to measure out a bushel of potatoes?

3. How many times must you fill a quart-measure to measure out a peck of oats? a bushel of oats?

4. How many times must you fill a half-peck measure to measure out a peck of apples? a bushel? half a bushel?

5. If quinces are a dollar a peck, what will a bushel cost at the same rate? What will 2 bushels cost?

6. If a quart of berries cost 7 cents, what will a peck cost? What will a peck and 2 quarts cost?

7. Hannah has 5 beads on one string and 15 on another. How many beads has she on both strings?

8. Blanche has 6 beads on one string and twice as many on another. How many beads has she on the other string? How many on both strings?

9. Helen had 17 plums; she gave away 9 and ate 5. How many did she give away and eat? How many had she left?

10. What will 5 railroad-tickets cost at 4 dollars apiece?

11. Mr. Jones bought 6 clocks at 5 dollars apiece. How much did they cost him?

12. Mr. Jones sold the 6 clocks at 8 dollars apiece. How much money did he receive for them?

13. Sarah, Grace, and Kitty have each new cambric dresses. If it takes 7 yards to make 1 dress, how many yards does it take to make 3 dresses?

14. May's mother has 19 tulips and May has 7. How many more has her mother than she?

15. If there are 10 buttons on each jacket, how many buttons are there on 5 jackets?

16. What is the difference between 12 and 19?

17. Charles bought 10 pencils and paid 4 cents apiece for them. How many cents did he pay?

18. Charles used up in one year 2 common pencils, 2 hard pencils, and 2 soft pencils. How many pencils did he use up, and what did they cost at 5 cents apiece?

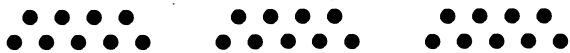
19. Nine boys were told they might pick up 6 apples apiece. Six of the boys picked up 6 apples apiece; how many apples did they pick up? The other 3 boys picked up 5 apples apiece; how many apples did they pick up?

Lesson XLII.

1. BANANAS grow in Florida and other warm countries. How many are there in this cluster? If you have a cluster of 9 bananas and another cluster just like it, how many bananas have you?

2. Two 9's are how many? How many 9's in 18?

3. If a banana costs 9 cents, how much will 3 bananas cost?



4. How many 9's in 27? How many 3's in 9? in 18? in 27?

Exercise in Adding and Subtracting at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
(5.)	9	9	9	9	9	9	9	9	9	9
Add	1	81	2	72	3	63	4	54	5	45

(6.) $6+9=?$ $36+9?$ $7+9?$ $27+9?$ $8+9?$ $18+9?$

(7.) $17-9?$ $27-9?$ $16-9?$ $36-9?$ $15-9?$ $45-9?$

Slate Exercise.

Copy and fill out on your slate the exercise and the table. As you copy each line of the exercise, count by 9's forward and back.

$9=9.$
$9+9=$
$9+9+9=$
$9+9+9+9=$
$9+9+9+9+9=$
$9+9+9+9+9+9=$
$9+9+9+9+9+9+9=$
$9+9+9+9+9+9+9+9=$
$9+9+9+9+9+9+9+9+9=$
$9+9+9+9+9+9+9+9+9+9=$

TABLE.

1 nine is 9.
2 nines are
3 nines are
4 nines are
5 nines are
6 nines are
7 nines are
8 nines are
9 nines are
10 nines are

Exercise in Multiplying at sight.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
(8.) Multiply	9	9	9	9	9	9	9	9	7	8
by	3	8	6	5	10	4	9	7	9	9

9. How many 9's are there in 18? in 36? in 27? in 54? in 45? in 63? in 81? in 72? in 90?

10. In one class there are 9 children on one settee, 9 on another, and 2 children besides. How many children are there in the class?

11. What would 4 loaves of bread cost at 9 cents a loaf?

12. What would 8 loads of hay cost at 9 dollars a load?

13. A baker sold 3 loaves of bread at 9 cents a loaf, and one loaf for 6 cents. What did he receive for the whole?

14. If a bushel of potatoes lasts 2 persons 9 weeks, how long will it last 1 person?

15. If you can get 9 dates for a cent, how many dates can you get for 5 cents? for 10 cents?

16. It takes Alfred 9 minutes to go to school and 7 minutes to come home, and he goes to school 6 times in a week. How many minutes is he in going to school 6 times?

17. How many minutes is he in coming home 6 times?

18. My father put up 9 barrels of apples for the winter. How much did they cost at 5 dollars a barrel?

19. Horace sold 8 bunches of roses at 5 cents a bunch. What did they all sell for?

20. If you make 7 squares of patchwork and put 8 pieces in a square, how many pieces do you use?

21. Nellie is 7 years old, and her grandfather is 9 times as old and 1 year more. How old is her grandfather?

22. How many are 9 times 7 + 1? 8 times 8 + 6?

23. If it takes 8 shoes to shoe an ox, how many will it take to shoe a yoke of oxen? to shoe 2 yoke, or 4 oxen?

Lesson XLIII.

1. In a park are two broods of beautiful young swans or cygnets. If there are ten in each brood, how many are in the two broods?

2. How many 10's in 20? How many 2's in 20? Three 10's are how many?

3. Make 40 marks on your slate. Count them forward and back by 10's; by 5's.

4. How many 10's are there in 30? in 40?

5. If cheese is 10 cents a pound, what must I pay for 3 pounds? for 4 pounds?

Exercise in Adding at sight.

(6.)	10	10	10	10	10	10	10	10
Add	20	30	40	60	50	70	80	90

Fill out the following

TABLE.

1 ten is 10.
2 tens are 20.
3 tens are
4 tens are
5 tens are
6 tens are
7 tens are
8 tens are
9 tens are
10 tens are

Exercise in Multiplying at sight.

(7.)	10	10	10	10	10
	×2	5	4	6	7
	10	10	10	10	10
	×3	1	8	10	9
(8.)	3	7	9	5	8
	×10	10	10	10	10
	6	2	1	4	10
	×10	10	10	10	10

9. How many 10's in 50? in 60? in 70? in 90?

Lesson XLIV.

About Money.

WHAT names are on these coins? The cent is made of bronze and the dime of silver. One dime is equal to ten cents.

1. Two dimes are equal to how many cents? 3 dimes? a half-dime? 2 dimes and a half?

2. If you had a dime changed to cents and should spend 7 cents, how many cents would you have left?

3. Mary has 2 dimes and John has 20 cents. How many cents must each get to have 25 cents?

A Gold Dollar.

4. One dollar is equal to 10 dimes. Two dollars are equal to how many dimes? 4 dollars? half a dollar?

5. If you get a dollar changed to dimes and have 8 dimes besides, how many dimes do you have in all?

6. If 10 cents make a dime and 10 dimes make a dollar, how many cents make a dollar?

Repeat the following table:

10 cents make a dime.
10 dimes make a dollar.
100 cents make a dollar.

7. A dime and a half-dime equal how many cents?

8. Two dimes and 3 cents equal how many cents?

9. If you have a half-dime and 4 cents, how many more cents must you get to have 2 dimes?

10. If you should buy 2 loaves of bread at 10 cents a loaf, and should give the baker twenty-five cents, how much should the baker give you back?

Now you may make some questions about money.

Lesson XLV.

1. ARTHUR has bought 4 carrots for his rabbits. If he gives them 2 carrots a day, how many days will the carrots last?

2. How many shoes make a pair? If a man can make 8 shoes in a day, how many pairs of shoes can he make?

3. How many 2's are there in 6? in 10? in 14? in 20?

4. How many 2-cent stamps can you buy for 16 cents?

5. If a letter-stamp costs 3 cents, how many letter-stamps can you buy for 6 cents? for 9 cents?

6. How many 3's are there in 9? in 15? in 12?

7. Dora has 18 cents to spend for oranges. At 2 cents apiece, how many oranges can she buy? If she pays 3 cents apiece, how many oranges can she buy?

8. How many feet make a yard? How many yards are there in 24 feet? in 21 feet? in 27 feet?

9. Arthur's father gave him 8 pears. If Arthur should eat 4 pears a day, how many days would they last?

10. How many 4's are there in 8? in 12? in 20? in 28?

11. How many quarts make a gallon? Mr. Snow sold 7 quarts of milk to one person, 8 quarts to another, and 9 quarts to another. How many quarts did he sell? how many gallons?

12. How many pecks make a bushel? Mr. Green sold 2 pecks of pears to Mr. Day, 3 pecks to Mrs. Ring, 7 pecks to Mr. March, and a bushel to Dr. Otis. How many bushels did he sell in all?

13. Horace spent 15 cents for oatmeal at 5 cents a pound. How many pounds did he buy?

14. Lillie arranged 20 autumn-leaves on the walls of her room, putting them 5 in a bunch. How many bunches did she make?

15. Margaret made some bouquets, putting 5 roses into each. If she used 25 roses, how many bouquets did she make?

16. How many hours will it take a man to go 12 miles if he goes 2 miles an hour? 3 miles? 4 miles? 6 miles?

To answer the above questions, you had to find how many 2's or 3's or 4's or 6's there are in the number 12. This is ***dividing.***

Finding how many 2's there are in a number is dividing by 2; finding how many 3's there are is dividing by 3; and so on.

12 divided by 2 may be written $12 \div 2$, or $2\overline{)12}$.

Exercises in Dividing.

Copy the following, and divide the numbers written in each line by the number written at the left, putting the answer beneath.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
2)	4	2	6	10	14	8	16	20	14	18
3)	6	9	21	15	24	12	3	18	30	27
4)	4	8	16	24	12	28	40	20	32	36
5)	5	30	10	25	15	50	40	20	35	45
6)	6	24	36	30	18	42	54	12	48	60

Look on the book and give the answers at sight.

Lesson XLVI.

1. EDITH spent 14 days at her uncle's. How many weeks did she spend?

2. If Edith had spent 21 days, how many weeks would she have spent?

3. How many 7's are there in 14? in 21?

4. If it takes 7 yards for a dress, how many dresses can be made by using 28 yards? 35 yards?

5. How many piles of 8 marbles each can you make with 16 marbles? with 24 marbles?

6. How many 8's are there in 16? in 24? in 32?

7. How many quarts make a peck? If the class should go out berrying and should pick 40 quarts of blackberries, how many peck-baskets could they fill with them?

8. John dug enough potatoes to fill 16 peck-baskets. How many bushels did he dig?

9. Mr. Dow has 42 tomato-plants to set. If he sets them 6 in a row, how many rows will he have? How many rows will he have if he sets them 7 in a row?

10. How many squares can you make with 48 pins if you put 8 pins in a square?

11. How many are four 7's less 3? five 7's less 4?

12. Mabel's grandmother cut out 18 pieces for her patchwork. If Mabel puts 9 of these pieces into a square, how many squares of patchwork can she have?

13. How many 9's are there in 18? in 27? $27 \div 9 = ?$

14. How many pounds of meat at 9 cents a pound can you buy for 36 cents?

15. How many whistles at 10 cents each can you buy for 20 cents?

16. Charles wants 45 cents to buy a cart with. His father has promised to give him 9 cents every week he does not whisper in school. In how many weeks can he earn the money?

17. Myra sews buttons on a card, putting 6 in a row. How many rows does she make to sew on 60 buttons?

18. Archie picked berries, filling a pint dish 15 times. How many quarts did he pick, and how many pints besides?

19. How many 2's are there in 15, and what remains? how many 2's in 11? in 17?

20. Measure the length of your school-yard. How many feet long is it? how many yards?

21. How many 3-cent postage-stamps can you buy with 25 cents, and how many 1-cent stamps can you buy with the money that is left?

22. How many 3's are there in 25? in 16? in 18? in 22?

Exercise in Dividing.

	a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
7)	7	21	35	14	28	42	56	63	49	70
8)	8	32	16	40	24	48	56	72	64	80
9)	9	36	27	45	63	54	18	72	63	90
10)	10	40	30	50	20	70	60	90	80	100

Look on the book and give the answers at sight.

Lesson XLVII.

1. ANNIE gathered 13 pinks in her garden to carry to school. She gave 4 pinks to each girl she met on the way. When she reached the school-house she had just 5 pinks to give to her teacher. How many pinks did she give to the girls? How many girls did she meet?

2. A man has 11 quarts of milk in cans that hold 4 quarts each. All the cans are full but one. How many cans are full? How many quarts are there in the can that is not full?

3. Mrs. Dole takes 2 quarts of milk every day. How many quarts does she take in a week? How many gallons?

4. How many 4's are there in 8? in 10? in 15?

5. How many 5's are there in 20? in 22? in 36?

6. A carpenter has 20 days' work to do on a school-house. How many weeks will it take him to do it if he works 6 days in a week?

7. 20 are how many 6's? 5's? 4's? 3's? 7's?

8. A dollar's worth of sugar lasted a family 17 days. How many weeks did it last and how many days over?

9. Luther went to a store with 50 cents to buy as many cabbages as he could at 7 cents apiece, and to spend the money that would be left for pears at a cent apiece. How many cabbages could he buy? How many pears?

10. If you buy a book for 16 cents and give two 10-cent pieces to pay for it, how many cents ought the storekeeper to give you back?

11. Ella's brother gathered 37 pond-lilies. He kept 7 himself and gave the rest to Ella. How many did he give to Ella?

12. Ella shared her 30 lilies with some girls, giving them 8 apiece and keeping the rest. With how many girls did she share them? How many lilies did she keep?

13. How many 8's are there there in 30? in 20? in 15?

14. 25 are how many 8's? 6's? 3's? 5's? 4's?

15. If you have 24 cents, how many picture-books at 10 cents apiece can you buy with your money?

16. How many mugs at 9 cents apiece can you buy for 20 cents?

17. If you have 20 cents, how many more cents must you get to buy 3 mugs at 9 cents apiece?

18. How many are 8 and 9 and 2 less 4?

19. How many 7's are there in 8 times 4?

20. $8 \times 6 = ?$ $48 + 8 = ?$ $48 - 8 = ?$ $48 \div 8 = ?$

21. $9 \times 7 = ?$ $63 + 7 = ?$ $63 - 7 = ?$ $63 \div 7 = ?$

22. Name the numbers from 3 to 30 that are made up of 3's without anything over.

23. Name the numbers from 3 to 30 that are made up of 3's and something over.

Slate Exercise in Adding.

a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
6	5	4	5	5	7	8	9	9	7
5	6	6	7	7	4	2	6	5	4
5	8	6	5	4	2	6	7	7	8
4	5	1	6	5	8	2	3	7	9
9	1	3	2	5	4	5	6	5	4
5	6	6	7	6	6	6	5	7	3
6	9	6	7	7	8	5	4	9	8

Lesson XLVIII.

1. THIS boat cost 20 cents. Walter paid for one half of it and Jack paid for the other. How much did each pay?

2. Jack earned his money by doing errands for his uncle. If he got 2 cents every time he did an errand, how many errands did he do to get 10 cents?

3. Walter got his money by selling pears out of his garden. If he sold 3 pears for a cent, how many pears did he sell for 10 cents?

4. Walter and Jack have just carried a basket of fruit to a sick playmate who lives in that house where the nets are. In the basket they carried 6 pears, 3 bunches of grapes, 9 sweet apples, 8 Porter apples, and 4 other apples. How many apples did they carry? How many more apples did they carry than pears?

5. If the grapes are worth 8 cents a bunch, how much are the 3 bunches worth?

6. Walter means to be a ship-carpenter and earn 3 dollars a day. 3 dollars a day is how much a week?

7. Jack wants to be a teacher, and says he shall show his boys out of school how to sail boats and make kites. If Jack uses 4 newspapers to make one kite, and he has 20 newspapers, how many kites can he make?

8. The father of these boys went to sea 2 weeks ago yesterday. How many days has he been gone?

9. He expects to be away a year. A year is 52 weeks and 1 day. If he went two weeks ago yesterday, how many more weeks does he expect to be away?

10. Jack and Walter sometimes make letters on the smooth, hard beach. One day Jack wrote "Love your neighbor," and a wave came and washed half of the letters away. How many were left?

11. These boys are going to make a sled for a Christmas present. They have bought the board for 9 cents. The runners will cost 18 cents, and they have only 11 cents left. How many more cents must they get to buy the runners? What will the board and runners together cost?

12. Their uncle will help them make the sled. If he works 20 minutes on it to-day and 20 minutes to-morrow, how many minutes will he work on it in the two days?

13. Their sister can knit a mitten in 5 days. How many days will it take her to knit both boys a pair?

Slate Exercise in Adding.

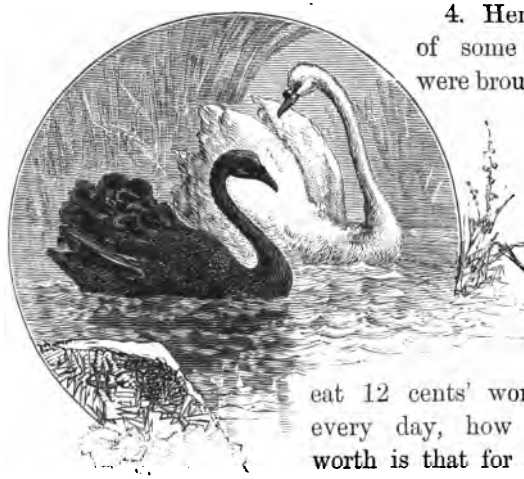
a.	*b.*	*c.*	*d.*	*e.*	*f.*	*g.*	*h.*	*i.*	*j.*
7	9	7	8	6	9	7	8	7	9
5	2	3	9	5	9	7	9	9	4
7	6	7	2	2	8	2	3	9	8
3	1	6	9	7	8	9	6	8	2
8	9	3	7	2	2	3	9	6	9
9	9	9	7	6	8	9	5	9	9
8	5	7	4	2	9	3	8	6	3

Lesson XLIX.

PUT down 4 blocks in two equal groups.

Put down 6 blocks in 2 equal groups.

1. What is half of 4 blocks? of 6 blocks?
2. Find half of 8 marks; of 10 marks.
3. When a number is divided into two equal parts, what do you call one of the parts?



4. Here is a picture of some swans that were brought from England. It cost 14 dollars to bring them both here. How much was that apiece?

5. If they eat 12 cents' worth of barley every day, how many cents' worth is that for each?

6. Copy the following, and write half of each number under the line.

2) 4 6 10 8 12 20 14 18 16

What do you divide by to find half of a number?

Put down 6 blocks in three equal groups.

One of these groups is a ***third*** of the 6 blocks.

7. One third of 6 blocks is how many?

Put down 9 blocks in three equal groups.

One of these groups is a third of 9 blocks.

8. One third of 9 blocks is how many?

9. When a number is divided into three equal parts what is one of the parts called?

Make 6 marks and draw a line around a third of them.

Make 6 marks and draw a line around 2 thirds of them.

10. How many marks are 2 thirds of 6 marks?

11. If these 2 thirds should be rubbed out, how many thirds would be left? How many marks?

12. What is 1 third of 9 marks? 2 thirds of 9 marks?

13. What is 1 third of 12 acorns? What is 1 third of 12 grapes? of 12 cents?

14. Three times what are 18? What is 1 third of 18?

15. Three times what are 21? What is 1 third of 21?

16. If 3 tops cost 21 cents, what part of 21 cents will 1 top cost? how many cents?

17. If 3 picture-books cost 24 cents, how many cents will 1 picture-book cost?

18. Horace found 27 nuts, and gave a third of them to Eva. How many did he give to Eva? How many were left?

19. Grace had 12 cherries, and gave half of them to John and a third of them to Mary. How many did she give to both? How many were left?

20. Copy the following, and write a third of each number under the line.

3) 6 3 9 12 18 15 24 21 27 30

What do you divide by to find a third of a number?

Lesson L.

MAKE 8 marks in 4 equal groups. || || || ||

One of these groups is a ***fourth*** of 8 marks.

1. How many marks are there in 1 fourth of 8 marks? in 2 fourths of 8 marks? in 3 fourths of 8 marks?

2. What is a fourth of 12 marks? of 12 pinks? of 16?

3. A teacher had 20 pansies, and divided them equally among 4 of her pupils. How many did she give to each? How many did she give to 2 pupils? to 3?

4. George had a third of 12 cents and Emma had a fourth of 12 cents. How many more cents did George have than Emma?

What do you divide by to find a fourth of a number?

Make 10 marks in 5 equal groups. || || || || ||

One of these groups is a ***fifth*** of 10 marks.

5. How many are there in 1 fifth of 10 marks? in 2 fifths of 10 marks? in 4 fifths?

6. If 5 boys share 10 pencils equally among them, what part of the pencils will each boy have? How many pencils? How many pencils will 2 boys have?

7. What is a fifth of 15 dots? of 20 lines? of 30 desks?

8. If you have 40 marbles and divide them equally among 5 boys, how many will each boy have?

9. If you have 30 pens and give a third of them away, how many will you give away? How many will you have left? If you divide what you have left into 5 equal parts, how many will there be in each part?

Make 12 marks in six equal groups. || || || || || ||

One of these groups is a ***sixth*** of 12 marks.

10. What is 1 sixth of 12 marks? 2 sixths of 12 marks? 3 sixths of 12? 5 sixths of 12? 4 sixths of 12?

11. If a boy has 18 ears of popping-corn and pops a sixth of it every day, how many ears does he pop in a day? In how many days will he pop the whole?

12. What is a sixth of 18? of 24? of 30?

13. What is the difference between a sixth of 30 apples and a fifth of 30 apples?

14. Put down 12 blocks; take away a sixth of them; take away a fifth of what are left put down 1 block more; take away a third of what you now have; take away half of what remain. How many are left?

Here are 14 marks in 7 equal groups. || || || ||
One of these groups is a ***seventh*** of 14 marks. || || ||

15. What is 1 seventh of 14 marks? 2 sevenths? 4 sevenths? 3 sevenths?

16. If a boy walks 14 miles in 7 hours, how many miles does he walk in 1 hour? in 3 hours?

17. Which would you rather have, a seventh of 21 peaches or a sixth of 24 peaches?

Here are 16 marks in 8 equal groups. || || || ||
One of these groups is an ***eighth*** of 16 || || || || marks.

18. What is 1 eighth of 16? 3 eighths of 16?

19. Delia found 24 flowers during her recess. 1 eighth of them were violets. How many were violets?

Here are 18 marks in 9 equal groups. || || || || ||
One of these groups is a ***ninth*** of 18 || || || || marks.

20. What is 1 ninth of 18 marks? 2 ninths of 18? 1 ninth of 27?

21. If it takes 27 yards of cloth to make 9 sacks, how many yards does it take to make one sack?

Lesson LI.

HERE are 20 marks in 10 equal groups. || || || || ||
One of these groups is a ***tenth*** of 20 || || || || ||
marks.

1. How many are there in 1 tenth of 20 ? in 2 tenths of 20 ? in 3 tenths of 20 ?

2. How many are there in 5 tenths of 20 ? How many are there in a half of 20 ? Is there any difference between 5 tenths of 20 and 1 half of 20 ?

3. What is 1 tenth of 30 ? of 40 ? of 50 ?

4. A man had 30 pounds of cheese and sold a tenth of it to a neighbor. How many pounds did he sell ? How many pounds were left ?

5. If 10 pounds of sugar will last a person 60 days, how long will 1 pound last ? How long will 2 pounds last ?

6. If 2 hats cost 10 dollars, how much will 1 hat cost ? How much will 3 hats cost ?

7. If 4 slates cost 40 cents, how much will 1 slate cost ? How much will 5 slates cost ?

8. Jane bought 3 arrows for 24 cents. How many cents must she pay for 1 arrow ? for 4 arrows ?

9. We counted 12 sparrows picking up crumbs near our door, when a dog frightened 6 of them away. What part of them did he frighten away ? What part of them remained ?

10. Put down 15 blocks ; take away a fifth of them ; take away 2 blocks more ; take away half of what remain. How many are left ?

11. Make 6 marks on your slate ; make half as many more ; make 1 more ; rub out a fifth of what you have ; now rub out a fourth of what remain. How many marks are left ?

12. If you find 3 cherries under a tree, and then find 3 more, and 1 more, and 5 more, and give away a third of what you have, how many do you give away?

13. When apples are 2 cents apiece, how many cents must you have to buy 2 apples and a slate worth 8 cents?

14. How many apples at 2 cents apiece can you buy for 15 cents, and how many cents will be left?

15. If 4 pears cost 20 cents, how many cents does 1 pear cost?

16. How many apples at 2 cents apiece will cost as much money as 4 pears at 5 cents apiece?

17. If you have 24 cents, how many pears at 5 cents each can you buy with your money, and how many apples at 2 cents each can you buy with the money you have left?

18. What will 6 yards of ribbon cost at 6 cents a yard? How many dimes and how many cents over will it take to pay for the ribbon?

19. Charles raised 9 melons in his garden, and sold 6 of them for 42 cents. How many cents was that for 1 melon?

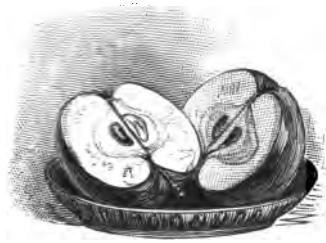
20. Charles carried the other 3 melons to the store and exchanged them for 4 slates worth 6 cents apiece. How much was allowed for each of these melons?

21. When 6 doves cost 54 cents, what will 5 doves cost?

22. Mr. Allen had 12 oranges, and told his boys that he would give the oldest 2 sixths of them and the youngest 1 third of them if they could tell how many each would have. How many would each have if they could tell?

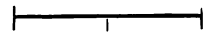
Now you may make some questions in numbers.

Lesson LII.



1. JOHN has cut an apple into two equal parts. One of these parts is called a half of an apple. How many halves are there in an apple?

Draw a line an inch long and divide it into halves.



2. How many halves are there in one inch?

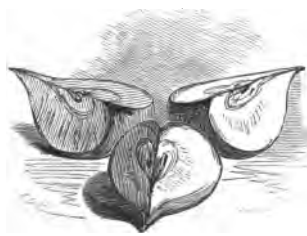
3. Harry cut a pencil into halves, and gave 1 half to his sister. How many halves had he left?

4. How many halves are there in 2 apples? in 2 apples and half an apple?

5. If you give 4 children half an apple apiece, how many halves do you give them? how many apples does it take?

6. If you give 5 children half an apple apiece, how many halves do you give them? how many apples does it take?

7. James has cut a pear into three equal parts. One of the parts is a third of the pear. Point to a third in the picture. Point to two of the thirds. How many thirds are there in the whole pear?



8. If you have a pear and eat a third of it, how many thirds will be left? If you eat 2 thirds of it, how many thirds will be left?

9. If you have 2 pears and cut them both into thirds, how many thirds will you have?

10. How many thirds are there in 3 pears? in 4 pears?

11. If you give 6 children a third of a pear apiece, how many thirds do you give them? how many pears?

12. If you have 4 pears and give 10 children a third of a pear apiece, how many thirds do you give them. How many thirds will you have left?

Draw a line an inch long.

Divide it into thirds.

13. Which is longer: a third of an inch or half an inch?

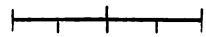
14. Which would you rather have for your recess: a third of an hour or half an hour?

15. Here is a melon divided into 4 equal parts. One of these parts is a fourth of the melon. How many fourths in a whole melon?

16. How many fourths of an orange make a whole orange?

17. How many fourths of a day make a whole day?

Draw a line an inch long and divide it into halves. Divide each half into two equal parts.



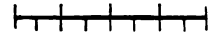
18. Into how many equal parts is the inch now divided? What part of the whole inch is one of the parts? If you rub out one of these fourths, how many fourths will be left?

19. How many are 4 fourths less 1 fourth? 4 fourths less 2 fourths?

20. If you have 3 fourths of a dollar and give away 1 fourth, how many fourths will be left?

21. If you have some apples cut into fourths, and give 3 fourths to Annie, 2 fourths to Charles, and 3 fourths to Frank, how many fourths do you give away? how many apples?

Lesson LIII.

DRAW a line an inch long and  divide it into fourths.

Divide each fourth into two equal parts.

1. Into how many equal parts is the inch now divided?

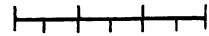
2. If the inch is divided into eight equal parts, what should you think one of the parts would be called?

3. How many eighths of an inch are there in an inch? How many eighths of an apple are there in an apple?

You may cut a strip of paper into eight equal parts.

4. How many of these eighths must you take away to leave 2 eighths? how many to leave 5 eighths?

5. 1 fourth equals how many eighths? 2 fourths equal how many eighths? 3 fourths equal how many eighths?

Draw a line an inch long and  divide it into thirds.

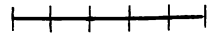
Divide each third into two equal parts.

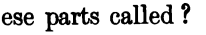
6. Into how many parts is the inch now divided? What should you think one of the parts would be called?

7. How many sixths are there in an inch? in a third of an inch? in 2 thirds of an inch?

8. If a pie is cut into sixths and 4 sixths are eaten, how many sixths are left? How many sixths are left if 5 sixths are eaten?

9. How many sixths are there in 2 inches? in 4 inches?

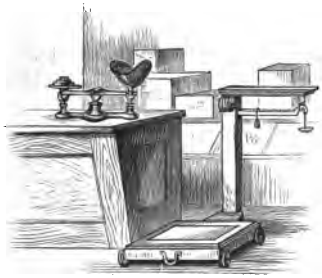
10. Here is an inch divided into  five equal parts. What is each of these parts called?

11. Here is an inch divided into  seven equal parts. What is each of these parts called?

12. How many fifths make a whole one? how many sevenths?

Lesson LIV.

About Weighing.



WHAT are the things on the floor and on the counter? What are they used for?

A pint of water weighs about a pound. How many pounds does a quart of water weigh? How many pounds do you weigh?

I hope you have some scales in your school-room that you can weigh with.

Find how many ounces this book weighs.

16 ounces make a pound.

1. How many ounces are there in half a pound? in a fourth of a pound? in 3 fourths of a pound? in an eighth of a pound?

2. At 20 cents a pound for honey, what must you pay for half a pound?

3. If you should buy half a pound of figs and give half of them away, what part of a pound would you give away? How many ounces?

If we put a hundred pounds of grain or sand in a bag, and then put 20 such bagfuls in a pile, all together will weigh a ***ton.*** If you weigh 50 pounds, forty such children as you taken together would weigh a ton.

Have you ever seen a ton of hay or a ton of coal?

4. When coal is 8 dollars a ton, what must be paid for 2 tons? for 2 tons and a half?

5. If it takes 7 barrels to hold a ton of coal, what part of a ton can be put into a barrel? How many sevenths of a ton will 3 barrels hold?

Lesson LV.

About measuring Time.

LOOK at the watch in the picture.

It takes just a minute for the little hand of a watch to go round once.

Keep perfectly still for a minute; your teacher will tell you when it is over; but you may raise your hand when you think a minute has passed.

How many minutes are given you for recess?

Which seemed longer, the minute you just measured or one of the minutes of your recess?

1. There are 60 seconds in a minute. Count 60 rather slowly, and see if it takes you a minute.

2. Sixty minutes make an hour. The long hand of a watch goes round once an hour and marks the minutes. Suppose it starts at XII, how many minutes will have passed when it gets to I? to II? to V?

3. What time is it by the watch in the picture?

60 seconds make a minute.
60 minutes make an hour.
24 hours make a day.
7 days make a week.
52 weeks and 1 day make a year.
12 months make a year.

4. How many hours are you in school each day? How many more hours are there in the day?

5. How many hours are you in school in a week?

6. If you go to school 8 months in a year, and it has taken you three years to go through this arithmetic, how many months have you been studying it?